USDA  Forest Service
U.S. DEPARTMENT OF AGRICULTURE

# Butte-Jefferson Ranger District Field Reference Guide 2023

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## Our Mission

We are an organization who provides a safe,
professional, highly skilled workforce to the public as repre-
sentatives of the Beaverhead-Deerlodge National
Forest based on pride in work and our core values.

### Core Values

Teamwork                        Duty

Integrity                       Respect

Commitment to Excellence        Professionalism

Loyalty                         Perseverance

Service                         Family

This document is intended to supplement, not replace, existing NWCG guides including the Incident Response Pocket Guide (IRPG, NFES 1077) and the Fireline Handbook (NFES 0065).

This document, nor any other publication, should ever replace forethought or common sense.

Thanks to Prineville IHC, Prineville Helitack, Lewis and Clark IHC, and  Alex Viktora of the Zion FUM  for information contained in this reference.

# Butte/Jefferson Fire Staff

|  | Name | Cell Phone | Office |
|---|---|---|---|
| **District FMO** | Kevin Smith | (406) 491-0202 | (406) 494-0215 |
| **Operations AFMO** | Shane Martin | (406) 533-9162 | (406) 494-0228 |
| **Fuels AFMO** | Jesse Myers | (406) 531-1652 | (406) 494-0224 |

| **E641** | | | | |
|---|---|---|---|---|
| Scott Drake<br>O:(406) 494-0252<br>C:(406) 459-8579*<br>H:(406) 491-0616 | Jonathan White<br>O:(406) 494-0234<br>C:(406) 214-7439*<br>H:(406) 490-0587 | Molly Chiappetta<br>C:(262) 994-1008 | Vacant | |
| Vacant | Eric Mcleod<br>C:(720) 361-7796 | Vacant | | |
| **Vet Crew** | | | | |
| Mitch Robbins<br>O:(406) 494-<br>C:(406) 431-7162 | James Freeman<br>C:(847) 337-9613 | | | |
| Richard Lozano<br>C:(818) 391-2704 | Christopher Payne<br>C:(540) 935-9437 | Randol Denney<br>C:(360) 628-9600 | Josh McCamby<br>C:(480) 353-8300 | |
| **E671** | | | | |
| Vacant | Matt Larson<br>O:(406) 287-<br>C:(406) 565-2788 | Doug Bertelson<br>C:(406) 209-1489 | Vacant | |
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| **E672** | | | | |
| Matt Racicot<br>O:(406) 287-9145<br>C:(406) 493-2278*<br>H:(406) 599-1065 | Vacant | Kristina Luotto<br>C: 408) 605-3332 | Lonnie Briggs<br>C:(304) 583-0334 | |
| Marino Wall<br>C: (406) 437-8327 | Iain Scott<br>C: (406) 521-0432 | Joseph Bogucki<br>C:(720) 202-6233 | Payton Sanford<br>C:(845) 540-4359 | |
| **Whitehall IA** | | | | |
| Gordon Wegley<br>O: (406) 287-9145<br>C: (406) 437-2589*<br>H: (406) 224-1542 | Rob Dunn<br>O: (406) 287-9145<br>C: (406) 599-3041 | Vacant | Maxwell Li<br>C: (301) 760-0066 | |
| Tyler Rollins<br>C: (218) 390-6323 | Brandon Self<br>C:(661) 238-8414 | Nakula Scheffer<br>C:(626) 260-1905 | Gabriel Samolyk<br>C:(603) 260-4365 | |

| **Fuels** | | **Sat Phone,** dial 480-468-2500 than phone number | |
|---|---|---|---|
| Vacant<br>C:( | Vacant<br>C:( | Butte Sat Phone<br>011-8816-5141-3229 | Whitehall Sat Phone<br>011-8816-5141-3228 |

# Butte/Jefferson Contacts

| Name | Phone | Cell |
|---|---|---|
| Butte Office Fax | (406) 494-0269 | |
| Whitehall Office Fax | (406) 287-9244 | |
| Dillon Dispatch | (406) 683-3975 | |
| Butte Front Desk | (406) 494-2147 | |
| Tim Lahey  - Ranger | (406) 494-0250 | (406) 533-8408 |
| Sarah Rouse—Deputy Ranger | (406) 494-0244 | (406) 274-2105 |
| Dave Scherbel -  Recreation | (406) 494-0246 | (406) 490-0810 |
| Anne Roberts  - Wildlife | (406) 494-0238 | (541) 420-3662 |
| Chance Reynolds -  Roads | (406) 494-0221 | (406) 260-3064 |
| Chuck Reynolds- Roads | (406) 494-0221 | (406) 546-0145 |
| Jeremiah Sperry -  Engineering | (406) 683-3910 | (406) 865-0453 |
| Randie Adams- Range | (406) 287-3047 | (406) 560-5229 |
| Jon Janik  - LEO | (406) 494-0217 | (406) 581-3723 |
| Lucas Phillips - Range Mgmt | (406) 494-0230 | (406) 490-7240 |
| Rob Morris- Radios | (406) 494-0247 | (406) 461-6841 |
| Kory Johnson- Rec/FFT2 | (406) 494-0249 | (406) 606-2086 |
| Bob Bundy - Rec/ENGB | (406) 494-0249 | (406) 792-5669 |
| Scott Forman - Rec/FFT2 | (406) 494-0249 | (406) 593-1640 |
| Amy Schwartz - Heritage | (406) 494-0257 | (406) 560-5250 |
| Joe Baer - Timber | (406) 494-0255 | (406) 303-0255 |
| Jason Willoughby -  Training | (406) 494-0216 | (406) 490-6761 |
| Russ Walker - TMO | (406) 494-0243 | (406) 214-6077 |
| Patrick Luckenbill - Hydro | | (401) 662-1838 |
| Sam Hodge - Timber | (406) 494-0232 | (406) 498-8649 |
| Russ Walker - Timber | (406) 494-0243 | (406) 207-5764 |
| Jim Carmody - Timber | (406) 494-0225 | (406) 490-3920 |
| Julie Edelen  - RA/Union | (406) 494-0254 | (406) 570-2204 |
| Lawrence Crofutt—Timber | (406) 494-0223 | (406) 533-8092 |
| | | |
| Fire Garage | (406) 494-0245 | |
| Silver Bow Sheriff Dept | (406) 497-1130 | |
| Silver Bow Fire Dept | (406) 497-6481 | |
| Jefferson Sheriff Dept | (406) 225-4075 | |
| Dillon Dispatch Duty Officer | (406) 490-8200 | |
| Albuquerque Service Center | 1-877-372-7248 | |
| Customer Help Desk (EUSC) | 1-866-945-1354 | |
| Interstate Alarm | 1-800-344-4546 | |

# Beaverhead-Deerlodge Fire Contacts

| Name | Phone | Cell |
|---|---|---|
| **Supervisors Office** | (406) 683-3900 | |
| Lisa Timchak - Forest Sup | (406) 683-3973 | (406) 899-5020 |
| Carol Hatfield—Deputy Forest Sup | (406) 683-3978 | (406) 431-9656 |
| Joe Sampson - Forest Fire Staff | (406) 683-3955 | (406) 491-0884 |
| Eric Reiner - Deputy Fire Staff | (406) 683-3923 | (406) 396-0724 |
| - Forest Fuels Spc | (406) | |
| - Forest Fire Planner | (406) | |
| Bert Smith - Forest Aviation Officer | (406) 683-3956 | (406) 660-7371 |
| Matt Nelson- Forest Prevention | | (406) 865-0454 |
| - North Zone Fuels Planner | | |
| - South Zone Fuels Planner | | |
| Terina Hill - Fire Public Affairs Officer | (406) 683-3920 | (406) 865-0941 |
| Erin Lally - Incident Business Specialist | | (406) 531-8357 |
| Catherine McRae- Forest PAO | (406) 683-3984 | (406) 925-3353 |
| - Forest Safety Officer | (406) | (406) |
| **Dillon Dispatch** | (406) 683-3975 | |
| Dave Mosher - Center Manager | (406) 683-3991 | (406) 491-0346 |
| Claire Smith - Assist Center Manager | (406) 683-3992 | (406) 660-2998 |
| Alex Horton - Lead Air Dispatch | (406) 683-3939 | (801) 554-1594 |
| Asheli Racicot - IA Dispatcher | (406) 683-3986 | (406) 490-0197 |
| Jason Mickelson—IA Dispatcher | (406) 683-3942 | (406) 240-7853 |
| **Wise River Helitack** | | |
| Randy Gilbert - Manager | (406) 683-3994 | (406) 925-3779 |
| Scott Wilkinson - Assistant Manager | (406) 683-3930 | (406) 925-9871 |
| **Dillon Ranger District** | (406) 683-3900 | |
| Aaron Knudsen - DFMO | (406) 683-3983 | (775) 846-3056 |
| - OPS AFMO | (406) | (406) |
| Chris Hinkey - E611 Captain | (406) 683-3968 | (406) 865-0189 |
| Colter Dickinson - Fuels Tech | (406) 683-3945 | (406) 291-5960 |
| Richard Reneau - Fuels AFMO | (406) 683-3911 | (406) 493-5799 |
| **Madison Ranger District** | (406) 682-4253 | |
| James King- DFMO | (406) 641-2355 | (406) 925-3802 |
| Paul Roose - OPS AFMO | (406) 641-2376 | (406) 640-1337 |
| Kyle Errecart - E661 Captain | (406) 641-2379 | (406) 207-6998 |
| Derek Wittenberg- E662 Captain | (406) 641-2380 | (406) 240-6619 |
| Jeff Barnes - Fuels AFMO | (406) 682-4253 | (406) 417-1352 |

# Beaverhead-Deerlodge Fire Contacts

| Name | Phone | Cell |
|---|---|---|
| **Pintler Ranger District** | (406) 859-3211 | |
| Jerod Russell - DFMO | (406) 859-3211 | (218) 946-6803 |
| -  OPS AFMO | (406) 859-3211 | (406) |
| Ryan Hennager- E681 Captain | (406) 859-3211 | (406) 593-1084 |
| Charlie McDonald - IA Captain | (406) 859-3211 | (406) 531-2424 |
| Matt Latray - Fuels AFMO | (406) 859-3211 | (406) 865-0452 |
| **Wisdom Ranger District** | (406) 689-3243 Wisdom | (406) 832-7128 Wise River |
| Richard Griffin - DFMO | (406) 689-3243 | (406) 925-1951 |
| Seth Bond – OPS AFMO | (406) 832-3178 | (937) 725-7157 |
| - E631 Captain | (406) 689-3243 | (406) |
| Tim Eteinne - E621 Captain | (406) 832-3178 | (406) 291-2162 |
| Justin Bogart – IA Captain | (406) 832-3178 | (406) 214-8960 |
| Paul Diaz - Fuels AFMO | (406) 689-3243 | (406) 531-3906 |
| **Butte/Dillon BLM** | (406) 533-7600 Butte | (406) 683-8000 Dillon |
| Brad Bergman - FMO | (406) 533-7611 | (406) 490-1123 |
| Greg Schenk - Fire Mgt Specialist | (406) 683-8047 | (406) 691-0371 |
| Mike King - Fuels Specialist | | (406) 370-2121 |
| Greg Campbell - Fuels Mgt Specialist | (406) 533-7608 | (406) 490-0548 |
| **Dillon DNRC** | (406) 683-6305 | |
| Jay Lemon - Unit FMO | (406) 683-6305 | (406) 491-8530 |
| Ben Holland- Unit AFMO | (406) 683-6305 | (406) 529-3585 |
| **Anaconda DNRC** | (406) 563-6078 | |
| Jonathan Clark - Unit FMO | (406) 563-6078 | (406) 560-5634 |
| Craig Hansen- Unit AFMO | (406) 563-6078 | (406) 498-0046 |
| **Helena DNRC** | (406) 458-3500 | |
| Chris Spliehof - Unit FMO | (406) 458-3502 | (406) 461-4688 |
| Jonathan Heslop - Unit AFMO | (406) 458-3512 | (406) 202-2314 |
| | | |
| Helena DNRC Duty Officer Phone | | (406) 444-3943 |
| **Anaconda Job Corp** | | |
| Monica Thomas - AFMO | (406) 563-8711 | (406) 479-3336 |
| - HCREW SUP | | (406) |

## Vehicle Information

| Vehicle | Seats | License | Year | Make | ID |
|---|---|---|---|---|---|
| 5838- E41 | 5 | A360486 | 2012 | Ford F550 4x4 | Wildcat Fire Trucks |
| 4029 - E71 | 5 | A343114 | 2021 | Ram 5500 | 1-888-722-5070 |
| 3044 - E72 | 5 | A304264 | 2020 | Ram 5500 | BFX |
| 3028 - IA Rig | 5 | A378855 | 2018 | Chevrolet 3500HD | 6.6 L Duramax |
| 5614 - White Buff | 5 | A356761 | 2011 | Chevrolet 3500HD | 6.6 L Duramax |
| 5718 - E72 Chase | 4 | A360314 | 2011 | Ford F250 | 6.8 L Gas |
| 2608– Fuels AFMO | 4 | A378855 | 2017 | Chevrolet 1500 | 5.3 L Gas |
| 0166 - FMO | 5 | A385936 | 2020 | Chevrolet 3500HD | 6.6 L Duramax |
| 3036 - Ops AFMO | 5 | A381238 | 2018 | Chevrolet 2500HD | 6.0 L Gas |

| Name | Office | Cell | Pager/Other |
|---|---|---|---|
| Jackie Dumke - Fleet Manager | (406) 683-3982 | (406) 925-1363 | |

Use **vehicle** card (labeled for each vehicle) for vehicle fuel, parts, and repairs only.

If any repair or service will exceed $500.00, please contact the Fleet Manager to authorize the charge before any work is initiated. Any repairs that may go over $2500 need to go to contracting, **DO NOT AUTHORIZE WORK TO PROCEED**.

If using a GSA rig the ID# is the license plate number minus the first and last numbers.

| E41 | | | | | |
|---|---|---|---|---|---|
| **Headlights** | H13/9008 | **Oil (13 qts)** | 15W-40 | **Transmission** | Mercon LV ATF |
| **Front Turn** | 3157NA | **Coolant** | Service Pro All | **Power steering** | Mercon LV ATF |
| **Front Side** | W5W | **Wipers** | 22" | **Lug Nut Torque** | 165 ft-lbs |
| **Mirror Turn/ Clearance** | 2825 | **Tires** | 225/70 R195 (95 PSI) | **Pump Oil** | 5W-30 Synthetic |
| **Pump Oil Filter** | B&S 820314 | **Pump Air** | B&S 820263 | **Pump Fuel Filter** | WF8059 |

| Butte Chase Rig | | | | | |
|---|---|---|---|---|---|
| **Headlights** | 13594523 | **Oil (8 qrt)** | 0W-20 | **Brake** | 13591403 |
| **Front Turn** | 13591404 | **Coolant (16.6 qrt)** | Dex-Cool | **Back-Up** | 13503360 |
| **Cargo Lamp** | 13503361/13503360 | **Wipers** | 21.7" (55cm) | **Torque** | 140 ft/lbs |
| **Transmission** | Dexron VI ATF | **Tires** | 285/70 R17 (35 psi) | **Engine** | 5.3 L |

| E71 | | | | | |
|---|---|---|---|---|---|
| Headlights | H13/9008 | Oil (13 qts) | 15W-40 | Transmission | Mercon LV ATF |
| Front Turn | 3157NA | Coolant | Service Pro All | Power steering | Mercon LV ATF |
| Front Side | W5W | Wipers | 22" | Lug Nut Torque | 165 ft-lbs |
| Mirror Turn/ | 2825 | Tires | 225/70 R195 (95 PSI) | Pump Oil | 5W-30 Synthetic |
| Pump Oil Filter | 85394 | Pump Air Filter | NAPA GOLD 6449 | Pump Fuel Filter | WF8059 |

| IA Rig | | | | | |
|---|---|---|---|---|---|
| Headlights | H11 | Oil (10 qrt) | 5W-40 SYNTHETIC | Brake/Turn | |
| Front Turn | 13591404 | Coolant | DEXCOOL | Buck-Up | |
| Cargo | 13503360 | Wipers | 22" | Torque | 165 ft/lbs |
| Transmission | DEXRON-VI ATF | Tires | LT 245/70R17 (80PSI) | Engine | 6.6 Duramax |

| IA Chase | | | | | |
|---|---|---|---|---|---|
| Headlights | H11/9005 | Oil (10 qrt) | 5w-40 synthetic | Brake/Turn | 3047K |
| Front Turn | 3047K | Coolant (28.5qts) | Dex-Cool | Back-up | 921LL |
| Cargo Lamp | 912LL | Wipers | 22" | Torque | 140 ft/lbs |
| DEF | 5.3 gal | Tires | 275/70R18 (55/50 PSI) | Engine | 6.6L Duramax |

| E72 | | | | | |
|---|---|---|---|---|---|
| Headlights | H11LL/ 9005LL | Oil (13 qts) | 15W-40 | Transmission | MOPAR A SRC ATF |
| Front Turn | 74444NA | Coolant | MOPAR Antifreeze | Power steering | SAE 75W-90 Synthetic |
| Front Side Marker | W5W | Wipers | 22" | Lug Nut Torque | 130-160 N |
| Mirror Turn/ Clearance | 194NA | Tires | Hercules Strong Guard HD 225/70R 19.5 | Pump Oil | 15W-40 |
| Pump Oil Filter | | Pump Air Filter | | Pump Fuel Filter | |

# King DPHX Programming Instructions

Use caution when field programming any radio.  These instructions are designed for radio users with field programming experience.

*\*\*The instructions below are for analog narrowband frequencies.  If you need to program digital frequencies, see the* **Digital Programming** *section (Page 14).\*\**

1.  Select group to program (generally  group 15 or 16 for fire incidents) by pressing [#] on keypad, selecting group number, and pressing the [ENT] key.

2.  Hold down red button on programming plug (or carefully bridge rear contacts of accessory jack w/ metal) and hold [FCN] key approximately 3 seconds until display shows *"-- -- -- ID"*.

3.  Enter Password (000000), then press the Enter [ENT] key.

4.  Display will read *"CH 00"*.  Select a channel by entering (1-16) then press the [FCN] key.  Toggle between wide "*CH 15*" and narrow "*CH 15 N*" by pressing the [#] key.

5.  Display will show "RX" receive frequency.  To change, press [CLR], then enter desired frequency (the decimal will insert automatically). Then press [ENT]. To skip press [FCN].

6.  Display will show *"MODE--A"*.**\*** DO NOT CHANGE.  Press [FCN].

7.  Display will show RX CG, the Code Guard or Tone. To change, press [CLR], enter desired 4 digits (the decimal will insert automatically), then press [ENT]. To skip press [FCN].

8.  Display will show *"NAC0000"*.**\*** DO NOT CHANGE.  Press [FCN] to skip.

9.  Display will show *"SQL—NRM"*.**\*** DO NOT CHANGE.  Press [FCN] to skip.

10.  Display will show "TX" transmit frequency.  To change, press [CLR], then enter desired frequency (the decimal will insert automatically). Then press [ENT].

11.  Display will show *"MODE--A"* DO NOT CHANGE.  Press [FCN] to skip.

12.  Display will show TX CG, the Code Guard or Tone.  To change, press [CLR], enter in desired 4 digits (the decimal will insert automatically).  Then press [ENT]. To skip press [FCN]. **Note:  tones are generally transmit if only one tone is given.**

13.  Display will show *"NAC0000"*.**\*** DO NOT CHANGE.  Press [FCN] to skip.

14.  Display will show *"TG00001"*.**\*** DO NOT CHANGE.  Press [FCN] to skip.

15.  Display will show channel label.  Press [FCN] to skip, or press [CLR] and then use the [PRI] button to scroll **in order** through the numeric characters.  Press [FCN] to select first character (character moves one space left per press), and then [PRI] to scroll for second character. [ENT] saves alphanumeric changes.

16.  Display will read *"CH XX"*.  Enter value for next channel to program and repeat steps 5-15.

17.  Use [FCN] key to scroll through and check all values.  Turn off radio to exit program mode.

# Digital Cloning

1. Program Master radio (make sure all settings including scan and priority are accurate).

2. Select desired group to program in Slave (your) radio (generally 16) by pressing [#] on keypad, selecting group number, and pressing the [ENT] key.

3. Turn off both radios and attach cloning cable between Master and Slave radio with program button on Master radio side.  Make sure all scan and priority switches are OFF for both radios. Turn on both radios.

4. Access Programming mode of Master radio with button (see #2 left).

5. With Master radio display reading *"CH 00",* press the [*] key on the Master radio.

6. "PRGM" will appear on screen and flash.

7. Press the Function [FCN] key and "PRGM" will appear without flashing as the slave radio is programmed (Slave radio's screen will flash VH-1).

8. Turn off slave radio, disconnect,  connect the next slave radio, and program by pressing the [FCN] key on Master radio once again.  Do not turn off Master radio in between clones.

**If display reads "FAIL" an error has occurred.**

      1.) Check batteries in both radios.

      2.) Check steps above, retry, and seek radio help if failure continues.

      3.) The cloning cable may not work between different types of radios (DPH→EPH or GPH→DPH).

**Radio Notes:**

If you have trouble keying in a tone or changing groups, your keypad may be locked.  Look at your screen, and if it says "*LOCKED"* than press and hold the [FCN] key until you see "*UNLOCKED."*

**To change a frequency from Narrowband to Wide band:** Press the [#] key when the channel number is displayed in program mode. "*N "* indicates Narrowband.

**DO NOT USE** a knife to push buttons on the keypad to avoid damage to the rubber waterproofing.

Use caution entering programming mode without a programming button.  A knife may be used, but can damage the contacts if pressed too firmly.

If a corded microphone is not used, a rubber cover will be used over the accessory jack at all times.

| NOAA WX Freqs |
| --- |
| RX 162.400 |
| RX 162.425 |
| RX 162.450 |
| RX 162.475 |
| RX 162.500 |
| RX 162.525 |
| RX 162.550 |

# Radio Programming Zero Codes

The "Zero Codes" control numerous features of your BK radio. **USE CAUTION WHEN CHANGING. This information provided for reference only.**

For all functions, press [**FNC**] to advance, and [**ENT**] to store any changes.

The display will show "PRG **P000000**" (Group password). **Do not change.**

The display will show "PRG iD **000000**" (ANI). Do not change.

The display will show "PRG TX **120 SEC**" (Transmit Time Out). A value of 0.0 disables time out feature.

The display will show "PRG SCN **2.0**" (Scan Delay Time). NIFC default is 2.0.

The display will show "PRG **PR1 OFF**" (Priority 1). Set to 16 (or whatever channel # for crew). A numerical value allows PR1 to be changed with keypad without re-entering program mode. Can also be set to "**PR1 ON**".

The display will show "PRG **PR2 OFF**" (Priority 2). Set to division tac or second most important channel. PR2 can only be changed by re-entering Zero Code program mode.

The display will show "PRG **1- - 12345**" (Group 1 Functions)

The display will show "PRG **2- - 12345**" (Group 2 Functions)

The display will show "PRG **3- - 12345**" (Group 3 Functions)

To change a number from flashing to solid (i.e. disable a function), simply touch the number on the key-pad, then press [**ENT**]. The opposite will also work. To enable a function, touch the number on the keypad, then press [**ENT**].

To change the "*LITE*" settings (display LCD light) touch the [**PRI**] button to scroll through options, then press [**ENT**] (Generally off except for extended nightshift operations). Both Group 3 and "LITE"

| Crew Settings | |
|---|---|
| Group Function | Flashing (Enabled) |
| 1 | 3 |
| 2 | 3,5 |
| 3 | 5 |

# Radio Programming Zero Codes (cont)

The "Zero Codes" control numerous features of your BK radio. **USE CAUTION WHEN CHANGING. This information provided for reference only.**

- Zero Codes are specific to each group, and must be programmed individually.

- In the table below, a function is enabled if a particular number is **Grey**.

- Common settings are indicated with **red highlights.**

- A function is enabled if the number is flashing.  For example, to enable DTMF encoder, the number **5** must be flashing in the Group 2 functions.  In the chart, you'll see that the number **5** is grey next to the DTMF.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Group One Functions** | | | | | | | | |
| 1 | Battery Saver Off  *(If 1 is flashing, Battery Saver is OFF!!)* | 1 | 2 | 3 | 4 | 5 | Disable battery saver function (bad) | |
| 1 | Group Scan List | 1 | 2 | 3 | 4 | 5 | Enables current group to scan in Group Scan Mode | |
| 1 | Transmit on PRI 1 | 1 | 2 | 3 | 4 | 5 | Transmit on priority 1 regardless of channel knob | |
| 1 | Priority Key Lockout (Bad) | 1 | 2 | 3 | 4 | 5 | Locks priority 1 (no keypad selection) | |
| 1 | Scan List Lockout (Bad) | 1 | 2 | 3 | 4 | 5 | Locks scan (no keypad selection) | |
| **Group Two Functions** | | | | | | | | |
| 2 | User Code Guard Enabled | 1 | 2 | 3 | 4 | 5 | **Allows keypad selectable tones (for repeaters)** | |
| 2 | Busy Channel Indicator enabled | 1 | 2 | 3 | 4 | 5 | Yellow LED will illuminate with Rx channel activity | |
| 2 | Busy Channel Lockout enabled (rarely enabled) | 1 | 2 | 3 | 4 | 5 | Yellow LED will illuminate and PTT (transmit)disabled with Rx channel activity | |
| 2 | Busy Channel Override enabled | 1 | 2 | 3 | 4 | 5 | PTT disabled with Rx channel activity but can be | |
| 2 | ANI enabled (rarely enabled) | 1 | 2 | 3 | 4 | 5 | Individual radio ID code transmit on PTT | |
| 2 | Manual DTMF Encoder enabled | 1 | 2 | 3 | 4 | 5 | Enables Keypad for  DTMF | |
| 2 | Manual DTFM/ANI Encoder | 1 | 2 | 3 | 4 | 5 | Individual radio ID code transmit  only when "ENT" pressed during Tx | |
| **Group Three Functions** | | | | | | | | |
| 3 | Light on Display Input | 1 | 2 | 3 | 4 | 5 | Handy for night shift but drains batteries | |
| 3 | Light on Key Press | 1 | 2 | 3 | 4 | 5 | Handy for night shift but drains batteries | |
| 3 | Alpha-numeric Mode enabled | 1 | 2 | 3 | 4 | 5 | Allows alpha numeric display | |
| **Back Light Duration**  (usually off) | | | | | | | | |
| Group Label (displays when changing groups) | | | | | | | | |

**Grey** numbers = Flashing numbers = Enabled Function

**Red** numbers = Flashing numbers = Common Settings

# Digital Programming

In order to use your DPH as a digital radio, there are several considerations.

MODE:  Must Be **D** (Digital) or **M** (Mixed)

NAC =    Network Access Code.  Essentially a digital "tone." This code will be provided for you, and it is required for digital frequencies to work.  The code may be either HEX or DEC.  Hand programming requires DEC inputs.

SQ OP: Do not change from default of "Normal".

TG = Talk Group ID. Provided for you by management unit - usually talk group 1.

**Things to remember:**

DPH radios can be set up with digital and analog frequencies in a single group.

When transmitting on a digital frequency, press PTT and wait one full second before speaking.

Digital repeaters may not be set up with a transmission "tail" or "kick-back".  An actual voice transmission may be needed to verify contact with the repeater.

If you know you'll be using digital frequencies, plan ahead - you may have most success programming your radios with the laptop and the BK software.

You can clone digital frequencies between DPH radios, just like analog frequencies.

## NACS

F7E allows radio to receive any digital signal on that frequency regardless of transmit NAC.

F7E hexadecimal = 3966 decimal for hand programming.

F7E is a receive NAC only.

Convert hexadecimal to decimal and vice-versa with the Microsoft calculator in Scientific Mode.

| National Standard Tones / NACs | | | |
|---|---|---|---|
| Std Tone | Analog Freq | DEC NAC | HEX NAC |
| 1 | 110.9 | 1109 | $455 |
| 2 | 123.0 | 1230 | $4CE |
| 3 | 131.8 | 1318 | $526 |
| 4 | 136.5 | 1365 | $555 |
| 5 | 146.2 | 1462 | $5B6 |
| 6 | 156.7 | 1567 | $61F |
| 7 | 167.9 | 1679 | $68F |
| 8 | 103.5 | 1035 | $40B |
| 9 | 100.0 | 1000 | $3E8 |
| 10 | 107.2 | 1072 | $430 |
| 11 | 114.8 | 1148 | $47C |
| 12 | 127.3 | 1273 | $4F9 |
| 13 | 141.3 | 1413 | $585 |
| 14 | 151.4 | 1514 | $5EA |
| 15 | 162.2 | 1622 | $656 |
| 16 | 192.8 | 1928 | $788 |

## Radio Use
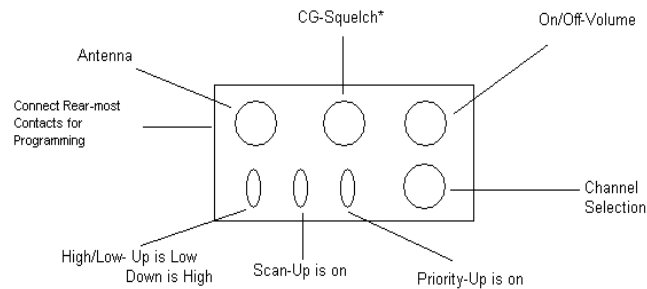


To activate a Code Guard (CG), turn the CG-Squelch Knob counter-clockwise (left) until it clicks. This will activate the receive Code Guard and is required to be in this position to effectively talk on channels with a tone guard. On an incident, leaving the CG-Squelch knob in this position, WILL NOT affect your communication on other tactical frequencies with no tone. However, it may affect communication using repeaters with keypad se-lectable code guards (Forest repeaters or IA dispatch in other regions).

To utilize keypad selectable tones, you must first program the Zero Code - group 2: func-tion 1 for each affected radio group (see page 13). Once user selected tones are enabled, use the keypad to select the appropriate tone for the repeater (1-9: see page 14). To return to a programmed code guard, press "zero" on the keypad to disable the user tone guard and allow the programmed code guard to function properly.

**To conserve batteries:**

1. Scan as few channels as possible.
2. Keep 'High/Low' toggle in the 'Low' position (use 'High" any time communication is not working well due to topography or distance).
3. No display backlight.

## Radio Use (Cont)

**To add/remove a channel to scan:** Press [ENT] to select, and [CLR] to remove. Scan must be disabled (switch toward front of radio) to add or remove channels.

Scan will check all selected channels for activity, but does not check for activity on other scan channels while receiving any input. Priority rechecks the selected priority channels during receive on non-priority channels, so traffic is not missed on the priority channel(s).

If the priority switch is up, the radio scans the priority channel(s) only.  To scan other selected channels, both PRI and Scan switches must be engaged (toward back of radio).

## Satellite Phone User Guide

**Butte Sat Phone #:** 8816-5141-3229

**Whitehall Sat Phone #:** 8816-5141-3228

To call sat phones from USFS landline: dial 480-768-2500 and when prompted enter number above.

To call sat phone from any other phone: dial 011 than the phone number

**To Use Phone:**

Power unit on.  Rotate antennae to proper angle, and extend.
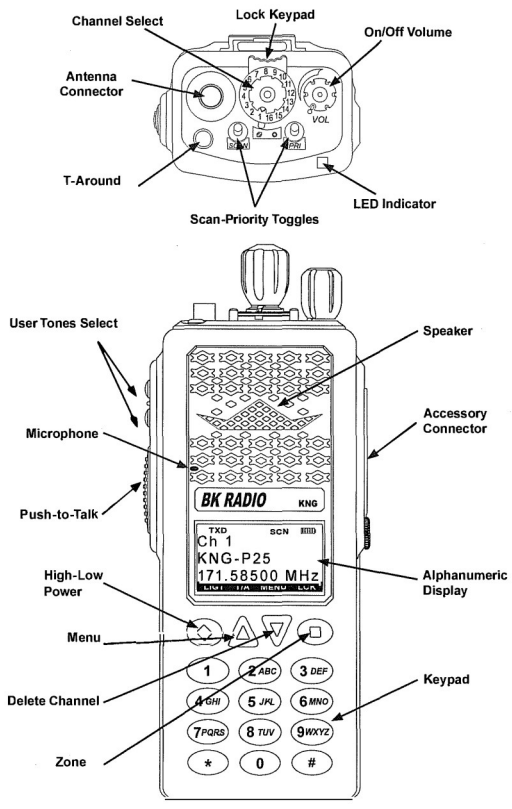
If asked, enter PIN: 1111

To call out: Dial 00 + 1 + seven digit phone number.  Press "OK"

Phone requires a clear view of sky with antennae pointed up. Once connected, avoid moving around.
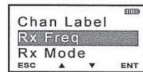
Customer Service: 001-709-748-4226.

# King KNG Programming Instructions

## Radio Controls

Channel Select

Lock Keypad

On/Off Volume

Antenna Connector

T-Around

Scan-Priority Toggles

LED Indicator

VOL

User Tones Select

Speaker

Microphone

Accessory Connector

Push-to-Talk

BK RADIO    KNG

TXD        SCN
Ch 1
KNG-P25
171.58500 MHz

High-Low Power

Alphanumeric Display

Menu

Delete Channel

Keypad

1    2 ABC    3 DEF

4 GHI    5 JKL    6 MNO

7 PQRS    8 TUV    9 WXYZ

*    0    #

Zone

# King KNG Programming Instructions

## Programming Channel Information
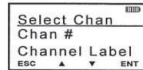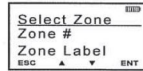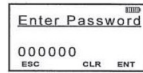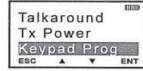
To enter the Channel Programming mode:

1. Press the MENU button.

2. Use the up/down arrows to highlight 'Keypad Prog'.

3. Press 'ENT'.

4. Use the up/down arrows to highlight 'Keypad Prog'.

5. Press 'ENT'.

6. Use the keypad to enter the six digit password.

7. Press 'ENT'.

8. Use the up/down arrows to highlight 'Channels'

9. Press 'ENT'

8. Use the up/down arrows to select the Zone of the desired channel.

9. Press 'ENT'.

10. Use the up/down arrows to select the desired channel.

11. Press 'ENT'.

12. Use the up/down arrows to select the function you wish to edit.

Programmable Channel functions include: Channel Label, Receive Frequency, Receive Mode, Receiver Code Guard, Squelch Mode, Transmit Frequency, Transmit Mode, Bandwidth, Transmit Code Guard, Transmit NAC, Talkgroup ID, Secure Mode selection, Encryption Key Lock and Low Power Lock.

## Channel Label
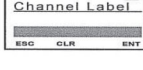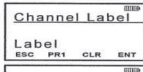
1. With 'Chan Label' highlighted, press the ENT button.

2. Press the 'CLR' button to clear the label.

2. Use the keypad to select the desired character. (See Keypad Character Chart.)

3. Press the 'NXT' button to move to the next character. Labels can contain up to thirteen characters.

4. Press the 'ENT' button to save the label.

5. Press the 'ESC' button to return to the Channel Programming menu.

# King KNG Programming Instructions

**Receive Frequency**

| Chan Label |
| :-- |
| Rx Freq |
| Rx Mode |
| ESC ▲ ▼ ENT |

| RX Frequency |
| :-- |
| 151.62500 MHz |
| ESC CLR ENT |

| RX Frequency |
| :-- |
| 000.00000 MHz |
| ESC CLR ENT |

1. With 'Rx Freq' highlighted, press the 'ENT' button.
2. Press the 'CLR' button to clear the current frequency.
3. Use the keypad to select the desired Receive Frequency.
4. Press the 'ENT' button to set the frequency.
5. Press the 'ESC' button to return to the Channel Programming menu.

**Receive Code Guard**

| Rx Guard |
| :-- |
| Rx NAC |
| Squelch Mode |
| ESC ▲ ▼ ENT |

| RX Guard |
| :-- |
| 000.0 |
| ESC CLR ENT |

| RX Guard |
| :-- |
| 000.0 |
| ESC CLR ENT |

1. With 'Rx Guard' highlighted, press the 'ENT' button.
2. Press the 'CLR' button to clear the currently programmed tone.
3. To enter CTCSS tones use the keypad to enter the tone in Hertz. (67.0 - 255 Hz) To enter CDCSS tones press the # key then enter the three digit code. (000 - 999)
4. Press the 'ENT' button to set the tone.
5. Press the 'ESC' button to return to the Channel Programming menu.

**Transmit Frequency**

| Squelch Mode |
| :-- |
| Tx Freq |
| Tx Mode |
| ESC ▲ ▼ ENT |

| TX Frequency |
| :-- |
| 151.62500 MHz |
| ESC CLR ENT |

| TX Frequency |
| :-- |
| 000.00000 MHz |
| ESC CLR ENT |

1. With 'Tx Freq' highlighted, press the 'ENT' button.
2. Press the 'CLR' button to clear the current frequency.
3. Use the keypad to select the desired Receive Frequency.
4. Press the 'ENT' button to set the frequency.
5. Press the 'ESC' button to return to the Channel Programming menu.

**Transmit Code Guard**

| Bandwidth |
| :-- |
| Tx Guard |
| Tx NAC |
| ESC ▲ ▼ ENT |

| TX Guard |
| :-- |
| 000.0 |
| ESC CLR ENT |

| TX Guard |
| :-- |
| 000.0 |
| ESC CLR ENT |

1. With 'Tx Guard' highlighted, press the 'ENT' button.
2. Press the 'CLR' button to clear the currently programmed tone.
3. To enter CTCSS tones use the keypad to enter the tone in Hertz. (67.0 - 255 Hz) To enter CDCSS tones press the # key then enter the three digit code. (000 - 999)
4. Press the 'ENT' button to set the tone.
5. Press the 'ESC' button to return to the Channel Programming menu.

**Group 1 - DILLON NET**

| CH | Frequency Description | RX | TX | TX Tone | TX NAC |
|---|---|---|---|---|---|
| 1 | PROJECT | 168.750 | 168.750 | 131.8 | 1318 |
| 2 | DILLON DIR | 172.350 | 172.350 | 123.0 | 1230 |
| 3 | WHISKEY | 172.350 | 165.750 | 146.2 | 1462 |
| 4 | TOWER MTN | 172.350 | 165.750 | 162.2 | 1622 |
| 5 | LEMHI PASS | 172.350 | 165.750 | 110.9 | 1109 |
| 6 | MAVERICK** | 172.350 | 165.750 | 100.0 | 1000 |
| 7 | ELLIS PEAK | 172.350 | 165.750 | 127.3 | 1273 |
| 8 | WHITE PINE | 172.350 | 165.750 | 131.8 | 1318 |
| 9 | SELWAY PK | 172.350 | 165.750 | 107.2 | 1072 |
| 10 | A/G #29 | 166.900 | 166.900 | | |
| 11 | BLM SOA 1 | 168.225 | 168.225 | 123.0 | 1230 |
| 12 | GYPPO | 151.925 | 151.925 | | |
| 13 | COM 1 | 168.6125 | 168.6125 | 131.8 | 1318 |
| 14 | RED (Fire Cmd) | 154.070 | 154.070 | 156.7 | 1567 |
| 15 | WHITE  (EMS) | 155.280 | 155.280 | 156.7 | 1567 |
| 16 | TAN (EMS A/G) | 155.340 | 155.340 | 156.7 | 1567 |

**Group 2 - BUTTE NET**

| CH | Frequency Description | RX | TX | TX Tone | TX NAC |
|---|---|---|---|---|---|
| 1 | PROJECT | 168.750 | 168.750 | 131.8 | 1318 |
| 2 | BUTTE DIR | 172.325 | 172.325 | 123.0 | 1230 |
| 3 | RED MTN | 172.325 | 164.825 | 103.5 | 1035 |
| 4 | BULL MTN | 172.325 | 164.825 | 100.0 | 1000 |
| 5 | BLIZZARD | 172.325 | 164.825 | 156.7 | 1567 |
| 6 | JACK MTN | 172.325 | 164.825 | 167.9 | 1679 |
| 7 | QUEENS HILL | 172.325 | 164.825 | 154.4 | 1544 |
| 8 | | 172.325 | 164.825 | 167.9 | 1679 |
| 9 | | 172.325 | 164.825 | 103.5 | 1035 |
| 10 | | 172.325 | 164.825 | 100.0 | 1000 |
| 11 | GYPPO | 151.9250 | 151.9250 | 000.0 | 0000 |
| 12 | COM 1 | 168.6125 | 168.6125 | 131.8 | 1318 |
| 13 | COM 2 | 163.7125 | 163.7125 | 131.8 | 1318 |
| 14 | COM 3 | 167.1375 | 167.1375 | 131.8 | 1318 |
| 15 | R1 SOA #4 RPT | 173.1875 | 164.3875 | 136.5 | 1365 |
| 16 | TAN (EMS A/G) | 155.340 | 155.340 | 156.7 | 1567 |

## Group 3 - MADISON NET

| CH | Frequency Description | RX | TX | TX Tone | TX NAC |
|---|---|---|---|---|---|
| 1 | **PROJECT** | 168.750 | 168.750 | 131.8 | 1318 |
| 2 | **MADISON DIR** | 171.425 | 171.425 | 123.0 | 1230 |
| 3 | **SOUTH BALDY** | 171.425 | 164.700 | 146.2 | 1462 |
| 4 | **LAZYMAN** | 171.425 | 164.700 | 123.0 | 1230 |
| 5 | **ELK LAKE** | 171.425 | 164.700 | 156.7 | 156.7 |
| 6 | **QUEENS HILL** | 172.325 | 164.825 | 151.4 | 1514 |
| 7 | **GYPPO** | 151.925 | 151.925 | | |
| 8 | **COM 1** | 168.6125 | 168.6125 | 131.8 | 1318 |
| 9 | **COM 3** | 167.1375 | 167.1375 | 131.8 | 1318 |
| 10 | **R1 SOA #3 RPT** | 173.1875 | 164.3875 | 123.0 | 1230 |
| 11 | Mad Co Sheriff Dir | Emergency | Only | | |
| 12 | Mad Co Fire Tac | Emergency | Only | | |
| 13 | Mad Co Norris | Emergency | Only | 141.3 | 1413 |
| 14 | Mad Co Madison | Emergency | Only | 162.2 | 1622 |
| 15 | Mad Co Sierra | Emergency | Only | 173.8 | 1738 |
| 16 | **TAN** (EMS A/G) | 155.340 | 155.340 | 156.7 | 1567 |

## Group 4 - BIG HOLE NET

| CH | Frequency Description | RX | TX | TX Tone | TX NAC |
|---|---|---|---|---|---|
| 1 | **PROJECT** | 168.750 | 168.750 | 131.8 | 1318 |
| 2 | **BIG HOLE DIR** | 173.0875 | 173.0875 | 123.0 | 1230 |
| 3 | **ODELL** | 173.0875 | 165.7250 | 167.9 | 1679 |
| 4 | **TIE CREEK** | 173.0875 | 165.7250 | 136.5 | 1365 |
| 5 | **DICKIE PEAK** | 173.0875 | 165.7250 | 151.4 | 1514 |
| 6 | **VIPOND PARK** | 173.0875 | 165.7250 | 103.5 | 1035 |
| 7 | **BIG HOLE PORTABLE** | 173.0875 | 165.7250 | 192.8 | 1928 |
| 8 | **LEMHI PASS** | 172.350 | 165.750 | 110.9 | 1109 |
| 9 | **SELWAY PK** | 172.350 | 165.750 | 107.2 | 1072 |
| 10 | **A/G #29**   (BD A/G1) | 166.900 | 166.900 | | |
| 11 | **A/G #26**   (B-D A/G2) | 166.6875 | 166.6875 | | |
| 12 | **COM 1** | 168.6125 | 168.6125 | 131.8 | 1318 |
| 13 | **COM 2** | 163.7125 | 163.7125 | 131.8 | 1318 |
| 14 | **COM 3** | 167.1375 | 167.1375 | 131.8 | 1318 |
| 15 | **GYPPO** | 151.925 | 151.925 | | |
| 16 | **TAN** (EMS A/G) | 155.340 | 155.340 | 156.7 | 1567 |

**Group 5 - PHILLIPSBURG NET**

| CH | Frequency Description | RX | TX | TX Tone | TX NAC |
|----|----------------------|------|------|---------|--------|
| 1 | PROJECT | 168.750 | 168.750 | 131.8 | 1318 |
| 2 | PBURG DIR | 173.725 | 173.725 | 123.0 | 1230 |
| 3 | EMERINE | 173.725 | 165.9125 | 107.2 | 1072 |
| 4 | HENDERSON | 173.725 | 165.9125 | 136.5 | 1365 |
| 5 | CHAMPION PASS | 173.725 | 165.9125 | 156.7 | 1567 |
| 6 | BFR | 173.725 | 165.9125 | 123.0 | 1230 |
| 7 | CABLE MTN | 173.725 | 165.9125 | 162.2 | 1622 |
| 8 | BLM SOA | 168.225 | 168.225 | 123.0 | 1230 |
| 9 | A/G 29 | 166.900 | 166.900 | 000.0 | 0000 |
| 10 | A/G 26 | 166.6875 | 166.6875 | 000.0 | 0000 |
| 11 | GYPPO | 151.925 | 151.925 | 000.0 | 0000 |
| 12 | COM 1 | 168.6125 | 168.6125 | 131.8 | 1318 |
| 13 | COM 2 | 163.7125 | 163.7125 | 131.8 | 1318 |
| 14 | COM 3 | 167.1375 | 167.1375 | 131.8 | 1318 |
| 15 | R1 SOA#2 RPT | 173.1875 | 164.3875 | 123.0 | 1230 |
| 16 | TAN (EMS A/G) | 155.340 | 155.340 | 156.7 | 1567 |

**Group 6 - D1 FIRE #1  (DILLON)**          USER-SELECTED TONE GROUP

| CH | Frequency Description | RX | TX | TX Tone | |
|----|----------------------|------|------|---------|--|
| 1 | PROJECT | 168.750 | 170.500 | 3 | |
| 2 | DILLON RPT | 172.350 | 168.750 | SEE TBL | |
| 3 | MADISON RPT | 171.425 | 164.700 | SEE TBL | |
| 4 | BIG HOLE RPT | 173.0875 | 165.7250 | SEE TBL | |
| 5 | SCF TAC (SALMON) | 171.525 | 171.525 | | |
| 6 | SCF RPT (SALMON) | 172.275 | 164.5 | SEE TBL | |
| 7 | CTF TAC 2    (TARGHEE) | 168.175 | 168.175 | | |
| 8 | CTF RPT (TARGHEE) | 170.525 | 164.9875 | SEE TBL | |
| 9 | SOA 1  (BLM SCENE-OF-A) | 168.225 | 168.225 | | |
| 10 | RED (Fire Co-op) | 154.070 | 154.070 | 6 | |
| 11 | ORANGE (dnrc tac) | 151.4 | 151.4 | 6 | |
| 12 | YELLOW (DNRC-A2G) | 151.220 | 151.220 | 6 | |
| 13 | A/G #29   (BD A/G1) | 166.900 | 166.900 | | |
| 14 | A/G #26   (B-D A/G2) | 166.6875 | 166.6875 | | |
| 15 | WHITE  (EMS) | 155.280 | 155.280 | 6 | |
| 16 | TAN  (EMS A/G) | 155.340 | 155.340 | 6 | |

| Group 7 - D1 FIRE #2 (Dillon) | USER-SELECTED TONE GROUP | | | | |
|---|---|---|---|---|---|
| CH | Frequency Description | RX | TX | TX Tone | |
| 1 | PROJECT | 168.750 | 168.750 | 3 | |
| 2 | DILLON RPT | 172.350 | 165.750 | SEE TBL | |
| 3 | BIG HOLE RPT | 173.0875 | 165.725 | SEE TBL | |
| 4 | KLV-872 (SHERIFF) | Emergency | Only | | |
| 5 | DILLON SHERIFF | Emergency | Only | | |
| 6 | DILLON FIRE VFD | 152.945 | 152.945 | | |
| 7 | GRASSHOPPER VFD | 160.200 | 160.200 | | |
| 8 | DILLON DNRC | 151.175 | 151.175 | | |
| 9 | YELLOW (DNRC-A2G) | 151.220 | 151.220 | 6 | |
| 10 | RED (Fire Co-op) | 154.070 | 154.070 | 6 | |
| 11 | ORANGE (DNRC Tac) | 151.400 | 151.400 | 6 | |
| 12 | BLM SOA 1 | 168.225 | 168.225 | | |
| 13 | A/G # 29 (B-D A/G1) | 166.900 | 166.900 | | |
| 14 | A/G #26 (B-D A/G2) | 166.6875 | 166.6875 | | |
| 15 | WHITE (EMS) | 155.280 | 155.280 | 6 | |
| 16 | TAN (EMS A/G) | 155.340 | 155.340 | 6 | |

| Group 8 - D2/3 FIRE #1 (WISE RIVER/WISDOM) USER-SELECTED TONE GROUP | | | | | |
|---|---|---|---|---|---|
| CH | Frequency Description | RX | TX | TX Tone | |
| 1 | PROJECT | 168.750 | 168.750 | 3 | |
| 2 | BIG HOLE RPT | 173.0875 | 165.7250 | SEE TBL | |
| 3 | DILLLON RPT | 172.350 | 168.750 | SEE TBL | |
| 4 | MADISON RPT | 171.425 | 164.700 | SEE TBL | |
| 5 | ANA DNRC | 151.190 | 151.190 | 13 | |
| 6 | SCF (SALMON) | 172.275 | 164.500 | SEE TBL | |
| 7 | BRF 2 (BITTERROOT) | 169.625 | 163.4625 | SEE TBL | |
| 8 | R1 SOA #2 RPTR | 173.1875 | 164.3875 | 2 | |
| 9 | RED (Fire Co-op) | 154.070 | 154.070 | 6 | |
| 10 | ORANGE (DNRC-Tac) | 151.400 | 151.400 | 6 | |
| 11 | R1 FIRE TAC | 167.1125 | 167.1125 | 6 | |
| 12 | GREEN (Forestry) | 171.475 | 171.475 | 6 | |
| 13 | A/G #29 (BD A/G1) | 166.900 | 166.900 | | |
| 14 | A/G #26 (B-D A/G2) | 166.6875 | 166.6875 | | |
| 15 | YELLOW (DNRC-A/G) | 151.220 | 151.220 | 6 | |
| 16 | TAN (EMS A/G) | 155.340 | 155.340 | 6 | |

| CH | Frequency Description | RX | TX | TX Tone | |
|----|----------------------|-----|-----|---------|---|
| GROUP 9 – D2/3 FIRE #2 (WISDOM/TARGHEE/SALMON)  USER-SELECT TONE GROUP | | | | | |
| 1 | PROJECT | 168.750 | 168.750 | 3 | |
| 2 | BIG HOLE RPT | 173.0875 | 165.725 | SEE | |
| 3 | DILLON RPT | 172.350 | 165.750 | SEE | |
| 4 | MADISON RPT | 171.425 | 164.700 | SEE | |
| 5 | BUTTE RPT | 172.325 | 164.825 | SEE | |
| 6 | YELLOW | 151.220 | 151.220 | 6 | |
| 7 | RED | 154.070 | 154.070 | 6 | |
| 8 | CTF DIR (TARGHEE) | 170.525 | 170.525 | | |
| 9 | CTF RPT (TARGHEE) | 170.525 | 164.9875 | SEE | |
| 10 | CTF TAC 2 (TARGHEE) | 168.175 | 168.175 | | |
| 11 | CTF TAC 3 (TARGHEE) | 166.9875 | 166.9875 | | |
| 12 | IFALLS BLM TAC 4 | 166.800 | 166.800 | | |
| 13 | SCF BLM SOA (SALMON) | 173.8625 | 173.8625 | | |
| 14 | SCF DIR (SALMON) | 172.275 | 172.275 | | |
| 15 | SCF RPT (SALMON) | 172.275 | 164.500 | SEE | |
| 16 | SCF NF TAC (SALMON) | 171.525 | 171.525 | | |

| CH | Frequency Description | RX | TX | TX Tone | |
|----|----------------------|-----|-----|---------|---|
| GROUP 10 – D4 FIRE #1 (BUTTE-JEFF FIRE)     USER-SELECT TONE GROUP | | | | | |
| 1 | PROJECT | 168.750 | 168.750 | 3 | |
| 2 | BUTTE RPT | 172.325 | 164.825 | SEE TBL | |
| 3 | DILLON RPT | 172.350 | 165.750 | SEE TBL | |
| 4 | MADISON RPT | 171.425 | 164.700 | SEE TBL | |
| 5 | BIG HOLE RPT | 173.0875 | 165.725 | SEE TBL | |
| 6 | BSB FIRE 1 | EMERGENCY | ONLY | | |
| 7 | JEFFCO 261 | EMERGENCY | ONLY | | |
| 8 | BSB PAGE | 154.16 | 154.16 | | |
| 9 | RED (Fire Co-op) | 154.070 | 154.070 | 6 | |
| 10 | MAROON (VFIRE21) | 154.280 | 154.280 | 6 | |
| 11 | BLM SOA 1 | 168.225 | 168.225 | | |
| 12 | R1 FIRE TAC | 167.1125 | 167.1125 | 6 | |
| 13 | A/G #29 (BD A/G1) | 166.900 | 166.900 | | |
| 14 | A/G #26 (B-D A/G2) | 166.6875 | 166.6875 | | |
| 15 | YELLOW (DNRC A/G) | 151.220 | 151.220 | 6 | |
| 16 | TAN (EMS A/G) | 155.340 | 155.340 | 6 | |

| CH | Frequency Description | RX | TX | TX Tone | TX NAC |
|---|---|---|---|---|---|
| **GROUP 11 – D4 FIRE #2  (BUTTE-JEFF LARGE FIRE)** | | | | |
| 1 | **RED MTN** | 172.325 | 164.825 | 103.5 | 1035 |
| 2 | **QUEENS HILL** | 172.325 | 164.825 | 151.4 | 1514 |
| 3 | **BLIZZARD** | 172.325 | 164.825 | 156.7 | 1567 |
| 4 | **JACK MTN** | 172.325 | 164.825 | 167.9 | 1679 |
| 5 | **BULL MTN** | 172.325 | 164.825 | 100.0 | 1000 |
| 6 | **SCARLET** | 154.2950 | 154.2950 | 156.7 | 1567 |
| 7 | **ORANGE** | 151.400 | 151.400 | 156.7 | 1567 |
| 8 | **R1 FIRE TAC** | 167.1125 | 167.1125 | 156.7 | 1567 |
| 9 | **RED** (Fire Co-op) | 154.070 | 154.070 | 156.7 | 1567 |
| 10 | **CORAL** | 154.265 | 154.265 | 156.7 | 1567 |
| 11 | **MAROON** | 154.280 | 154.280 | 156.7 | 1567 |
| 12 | **A/G #29**   (BD A/G1) | 166.900 | 166.900 | | |
| 13 | **A/G #26**   (B-D A/G2) | 166.6875 | 166.6875 | | |
| 14 | **YELLOW** | 151.22 | 151.22 | 156.7 | 1567 |
| 15 | **TAN** | 155.340 | 155.340 | 156.7 | 1567 |
| 16 | **AIR GUARD** | 168.625 | 168.625 | 110.9 | 110.9 |

| CH | Frequency Description | RX | TX | TX Tone | |
|---|---|---|---|---|---|
| **GROUP 12 – D6 FIRE #1 (MADISON-COUNTY FIRE)  USER-SELECT TONE GROUP** | | | | |
| 1 | **PROJECT** | 168.750 | 168.750 | 3 | |
| 2 | **MADISON RPT** | 171.425 | 164.700 | **SEE TBL** | |
| 3 | **DILLON RPT** | 172.350 | 165.750 | **SEE TBL** | |
| 4 | **BUTTE RPT** | 172.325 | 164.825 | **SEE TBL** | |
| 5 | **MAD CO**(Emer Only) | 155.025 | 153.935 | **SEE TBL** | |
| 6 | **MAD VF TAC** | 154.400 | 154.400 | 13 | |
| 7 | **SOA 1  (BLM SCENE-OF-A)** | 168.225 | 168.225 | | |
| 8 | **R1 FIRE TAC** | 167.1125 | 167.1125 | 6 | |
| 9 | **WHITE   (EMS local)** | 155.280 | 155.280 | 6 | |
| 10 | **RED   (Fire Co-op)** | 154.070 | 154.070 | 6 | |
| 11 | **PURPLE  (SAR STATE)** | 155.220 | 155.220 | 6 | |
| 12 | **COM 3** | 167.1375 | 167.1375 | 3 | |
| 13 | **A/G #29   (BD A/G1)** | 166.900 | 166.900 | | |
| 14 | **A/G #26   (B-D A/G2)** | 166.6875 | 166.6875 | | |
| 15 | **YELLOW  (DNRC A/G)** | 151.220 | 151.220 | 6 | |
| 16 | **TAN  (EMS A2G)** | 155.340 | 155.340 | 6 | |

| GROUP 13 – D6 FIRE #2 (MADISON-GALLATIN)   USER-SELECT TONE GROUP | | | | | |
|---|---|---|---|---|---|
| CH | Frequency Description | RX | TX | TX Tone | |
| 1 | PROJECT | 168.750 | 168.750 | 3 | |
| 2 | MADISON RPT | 171.425 | 164.700 | SEE TBL | |
| 3 | R1 FIRE TAC | 167.1125 | 167.1125 | 6 | |
| 4 | WZN TAC(COM1) | 168.6125 | 168.6125 | | |
| 5 | BZN DIR | 169.925 | 169.925 | 2 | |
| 6 | HEBGEN DIR | 164.8250 | 164.8250 | 3 | |
| 7 | GAL REPEATER | 169.925 | 163.1625 | SEE TBL | |
| 8 | GAL CO FIRE TAC 1 | 154.385 | 154.385 | 16 | |
| 9 | MAD CO(EMER ONLY) | 155.025 | 153.935 | SEE TBL | |
| 10 | RED | 154.070 | 154.070 | 6 | |
| 11 | SCARLET | 154.2950 | 154.2950 | 6 | |
| 12 | GOLD | 153.905 | 153.905 | 6 | |
| 13 | A/G #29  (BD A/G1) | 166.900 | 166.900 | | |
| 14 | A/G #18 GAL | 168.0125 | 168.0125 | | |
| 15 | YELLOW | 151.220 | 151.220 | 6 | |
| 16 | TAN (EMS A/G) | 155.340 | 155.340 | 6 | |

| GROUP 14 – D8—FIRE  (PINTLER FIRE)      USER-SELECT TONE GROUP | | | | | |
|---|---|---|---|---|---|
| CH | Frequency Description | RX | TX | TX Tone | |
| 1 | PROJECT | 168.750 | 168.750 | 3 | |
| 2 | PBURG RPT | 173.125 | 165.9215 | SEE TBL | |
| 3 | BUTTE RPT | 172.325 | 164.825 | SEE TBL | |
| 4 | BIG HOLE RPT | 173.0875 | 165.725 | SEE TBL | |
| 5 | GRANITE CO. | EMERGENCY | ONLY | 13 | |
| 6 | ANA DNRC | 151.190 | 151.190 | 13 | |
| 7 | BLM RPT | 169.675 | 162.1625 | SEE TBL | |
| 8 | PBURG VFD | 154.235 | 154.235 | | |
| 9 | RED | 154.070 | 154.070 | 6 | |
| 10 | ORANGE | 151.400 | 151.400 | 6 | |
| 11 | MAROON | 154.280 | 154.280 | 6 | |
| 12 | GYPPO | 151.925 | 151.925 | | |
| 13 | A/G #29  (BD A/G1) | 166.900 | 166.900 | | |
| 14 | A/G #26   (B-D A/G2) | 166.6875 | 166.6875 | | |
| 15 | YELLOW | 151.220 | 151.220 | 6 | |
| 16 | TAN  (EMS A/G) | 155.340 | 155.340 | 6 | |

| GROUP 15 – WEATHER/TIMBER/FISH | | | | | |
|---|---|---|---|---|---|
| CH | Frequency Description | RX | TX | TX Tone | |
| 1 | PROJECT | 168.750 | 168.750 | 131.8 | 1318 |
| 2 | FISH D | 173.625 | 173.625 | | |
| 3 | FISH RPT | 173.625 | 167.1375 | 136.5 | 1365 |
| 4 | R1 SOA#4 RPT | 173.1875 | 164.3875 | 136.5 | 1365 |
| 5 | NOAA 1(MISSOULA) | 162.400 | | | |
| 6 | NOAA 4(DILLON) | 162.475 | | | |
| 7 | NOAA 7 (BUTTE) | 162.550 | | | |
| 8 | COM 1 | 168.6125 | 168.6125 | 131.8 | 131.8 |
| 9 | COM 3 | 167.1375 | 167.1375 | 131.8 | 131.8 |
| 10 | MANN | 155.35 | 155.35 | | |
| 11 | BAILEY | 153.065 | 153.065 | | |
| 12 | GYPPO | 151.925 | 151.925 | | |
| 13 | LORENGO | 151.895 | 151.895 | | |
| 14 | SUN MTN | 153.080 | 153.080 | | |
| 15 | LEMHI PASS | 172.350 | 165.750 | 110.9 | 1109 |
| 16 | SELWAY | 172.350 | 165.750 | 107.2 | 1072 |

| GROUP 16 – BLM | USER-SELECT TONE GROUP | | | | |
|---|---|---|---|---|---|
| CH | Frequency Description | RX | TX | TX Tone | |
| 1 | PROJECT | 168.750 | 168.750 | 3 | |
| 2 | DILLON RPT | 172.350 | 165.750 | SEE TBL | |
| 3 | MADISON RPT | 171.425 | 164.700 | SEE TBL | |
| 4 | BIG HOLE RPT | 173.0875 | 165.725 | SEE TBL | |
| 5 | BUTTE RPT | 172.325 | 164.825 | SEE TBL | |
| 6 | BLM SOA 1 | 168.225 | 168.225 | 2 | |
| 7 | BLM SOA 2 | 167.175 | 167.175 | 2 | |
| 8 | BLM RPT | 169.675 | 162.1625 | SEE TBL | |
| 9 | ORANGE (DNRC Tac) | 151.400 | 151.400 | 6 | |
| 10 | R1 FIRE TAC | 167.1125 | 167.1125 | 6 | |
| 11 | WHITE (EMS local) | 155.280 | 155.280 | 6 | |
| 12 | RED (Fire Co-op) | 154.070 | 154.070 | 6 | |
| 13 | A/G #29 (BD A/G1) | 166.900 | 166.900 | | |
| 14 | A/G #26 (B-D A/G2) | 166.6875 | 166.6875 | | |
| 15 | YELLOW | 151.220 | 151.220 | 6 | |
| 16 | TAN (EMS A/G) | 155.340 | 155.340 | 6 | |

| CH | Frequency Description | RX | TX | TX Tone | |
|---|---|---|---|---|---|
| GROUP 20 – BORDER FORESTS | | | | | |
| 1 | **PROJECT** | 168.750 | 168.750 | 3 | |
| 2 | **BUTTE RPT** | 172.325 | 164.825 | SEE | |
| 3 | **DILLON RPT** | 172.350 | 165.750 | SEE | |
| 4 | **MADISON RPT** | 171.425 | 164.700 | 2/5/6 | |
| 5 | **BIG HOLE RPT** | 173.0875 | 165.725 | SEE | |
| 6 | **PBURG NET** | 173.725 | 165.9125 | SEE | |
| 7 | **SCF** (SALMON-CHALLIS) | 172.275 | 164.500 | SEE | |
| 8 | **HLN** (HELENA) | 153.905 | 153.905 | SEE | |
| 9 | **BRF-2**(BITTERROOT E.FK | 169.625 | 163.4625 | SEE | |
| 10 | **GNF-WZ**(GALLATIN WST) | 169.925 | 163.1625 | SEE | |
| 11 | **LNF-C** (LOLO CENTRAL) | 172.375 | 164.100 | SEE | |
| 12 | **RED** (Fire Co-op) | 154.070 | 154.070 | 6 | |
| 13 | **A/G #29** (BD A/G1) | 166.900 | 166.900 | | |
| 14 | **A/G #26** (B-D A/G2) | 166.6875 | 166.6875 | | |
| 15 | **YELLOW** (DNRC A/G) | 151.220 | 151.220 | 6 | |
| 16 | **TAN** (EMS A/G) | 155.340 | 155.340 | 6 | |

| CH | TONE | DILLON NET | BUTTE NET | MADISON NET | BIG HOLE NET | PBURG NET |
|---|---|---|---|---|---|---|
| REPEATER TONE TABLE | | | | | | |
| 1 | 110.9 | **LEMHI** | | | | |
| 2 | 123.0 | | | **LAZYMAN** | | **BFR** |
| 3 | 131.8 | **WHITE PINE** | | **SKYLINE** | | |
| 4 | 136.5 | | | | **TIE CREEK** | **HENDERSON** |
| 5 | 146.2 | **WHISKEY** | | **S. BALDY** | | **WHISKEY** |
| 6 | 156.7 | | **BLIZZARD** | **ELK LAKE** | | **CHAMPION** |
| 7 | 167.9 | | **JACK MTN** | | **ODELL** | |
| 8 | 103.5 | | **RED MTN** | | **VIPOND PARK** | |
| 9 | 100.0 | **MAVERICK** | **BULL MTN** | | | |
| 10 | 107.2 | **SELWAY PEAK** | | | | **MT EMERINE** |
| 11 | 114.8 | | | | | |
| 12 | 127.3 | **ELLIS PEAK** | | | | |
| 13 | 141.3 | | | **NORRIS** | | |
| 14 | 151.4 | | **QUEENS HILL** | **W. BENCH** | **DICKIE PEAK** | |
| 15 | 162.2 | **TOWER MTN** | | **MADISON** | | **CABLE** |
| 16 | 192.8 | **PORTABLE** | **PORTABLE** | **PORTABLE** | **PORTABLE** | **PORTABLE** |

| REPEATER TONE TABLE  OFF-FOREST | | | | | | | |
|------|------|-----------|-----------|-----------|-----------|-----------|-----------|
| CH | TONE | BRF-2 | SCF | CTF-N | HLN | GNF | LNF-C |
| 1 | 110.9 | | MIDDLE FK | | MAC PASS | HYALITE | |
| 2 | 123.0 | BAILEY LK | LONG TOM | RELAY | DIRECT | EAGLHD W | |
| 3 | 131.8 | | FS RAMSEY | MAHOGANY | DUCK CR | SKYLINE | |
| 4 | 136.5 | TEEPEE PT | TAYLOR | SIGNAL | ROVER | HORSE BTE | MINERAL |
| 5 | 146.2 | DIRECT | STEIN | SAWTELL | PARK PK | CINNAMON | |
| 6 | 156.7 | MILLER | SALT CR | | | GARNET | QUIGG PK |
| 7 | 167.9 | WARD MTN | JACK MTN | RED PK | GRANITE | BLACKTAIL | |
| 8 | 103.5 | PORTABLE | | | HOGBACK | BRIDGER W | STARK MTN |
| 9 | 100.0 | | OREANA | PORTABLE | ELK MTN | | UNIVERSITY |
| 10 | 107.2 | | | | | | WHITE MTN |
| 11 | 114.8 | QUIGG | | | OGDEN | | |
| 12 | 127.3 | WILLOW | | | | | |
| 13 | 141.3 | | | | GATES | | |
| 14 | 151.4 | | | | | | |
| 15 | 162.2 | | | | | | |
| 16 | 192.8 | | | | STONEWALL | PORTABLE | |

**HOW TO USE USER-SELECT TONES**

**DPH:** To utilize USER SELECT TONES, turn off scan. Press number on keypad corresponding to desired repeater tone guard. Transmit – see display, should display "CG" while tone guard is applied, While transmitting it should flash the channel number with desired tone guard.  The tone guard will apply to the entire group!

To Cancel, turn off "scan" and "pri", then press "0"

**KNG:** To utilize USER-SELECT TONES, turn knob selector to desired repeater channel, Press the User-Select Tones button ( above the PTT button).  Press number on keypad corresponding to desired repeater tone guard or scroll to desired tone.  The tone guard applies only to one channel!

To cancel, press the User-Select Tones button and select "0"

**TRAINING FREQUENCIES:**

| CHANNEL | TX | RX | TONE |
|---------|----------|-----------|-------|
| TRAIN 1 | 167.1375 | 1671375 | 218.1 |
| TRAIN 2 | 168.6125 | 168.6125 | 218.1 |
| TRAIN 3 | 173.6250 | 173.6250 | 218.1 |
| TRAIN 4 | 163.7125 | 163.7125 | 218.1 |
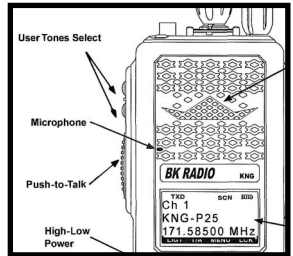
# Beaverhead-Deerlodge NF Repeater Map



Beaverhead-Deerlodge NF
Ranger Districts and
Repeater Sites
10/18/22

**Legend**

- Towns

**Major Roads**
- Interstate
- Other Route
- State Route
- U.S. Route

**BD Ranger Distircts**
- Butte RD
- Dillon RD
- Jefferson RD
- Madison RD
- Pintler RD
- Wisdom RD
- ▲ Communication Site

N

0   7.5   15   22.5   30
Miles

The USDA Forest Service manages this data
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# Chainsaw Guide

**Use caution when making chainsaw carburetor adjustments.**
**Instructions are intended for experienced saw tuners ONLY.**
**If you are unfamiliar with these procedures, seek out someone who is.**

**If your saw fails to start, check the following first:**

1. Fuel (50:1 Mix), at least 1/2 full fuel tank, and saw is not flooded.
2. On/off switch is turned ON.
3. Spark plug has spark.
4. Exhaust screen is clean.
5. Air filter is clean.
6. Adjust carburetor screws only if needed.
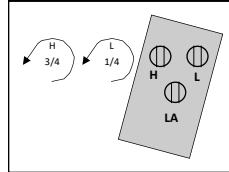
   **NEVER OVER TIGHTEN**. Turn both screws to the right (clockwise) until stop. Then, back to the left (counter-clockwise) until desired setting.

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**Carburetor Field Adjustments**

Clean or replace air filter. You cannot properly tune the carburetor unless the air filter is clean and in good condition. Saw should be **warm**, and fuel tank at least 1/2 full.

**If engine stops while idling:**

1. Open the low speed screw [L] one quarter turn counterclockwise from stop.
2. With saw running, turn the idle speed screw [LA] clockwise until chain begins to run, then back counterclockwise one quarter turn.

**If chain runs while idling:**

1. Open the low speed screw [L] one quarter turn counterclockwise from stop.
2. With saw running, turn the idle speed screw [LA] counterclockwise until chain stops, then one quarter turn in same direction (counterclockwise). If chain movement continues after adjustment, **do not use saw.**

**If idling is erratic:**

Turn the low speed screw [L] counterclockwise until acceleration is smooth (It is usually necessary to adjust the idle speed [LA] after every correction of the [L] screw).

**For High Elevation Operation (only required if power is too low):**

With warm saw, turn high speed screw [H] slightly clockwise (leaner). There is a risk of engine damage if saw is run too lean. Do not adjust [H] without a tachometer.

**After all adjustments:**

Idle for 30 seconds. Saw should idle in all positions. If not, repeat above.

Throttle up saw. Saw should immediately respond. If not, repeat above.

# Chainsaw Information

| Saw Tach RPM Guide | | | |
|---|---|---|---|
| Model | Idle | Max RPM | Tuned |
| **STIHL** | | | |
| 360/036 | 2800 | 13000 | 11,400-12,200 |
| 440/044 | 2500 | 14000 | 12,500-13,200 |
| 441 | 2500 | 13500 | 13,000 |
| 460/046 | 2500 | 13500 | 12,000-12,800 |
| 660/066 | 2500 | 13500 | 12,000-12,800 |
| **Husky** | | | |
| 372 XP | 2700 | 13500 | |
| 385 XP | 2700 | 12500 | |
| 395 XP | 2500 | 12000 | |

- Any large change in elevation may require a carburetor adjustment.

- Do not adjust the high end without a digital tachometer.

- Some adjustment screws are plastic and can easily be stripped.

- Before adjusting the carburetor do the following troubleshooting:
  1. Check and clean the air filter
  2. Check the spark plug - white residue means saw is too lean. Black means saw is too rich.
  3. Check gap or replace plug.

**If unsure on saw tuning, get help!**

This info is provided for reference, not instruction.

| STIHL Bars | |
|---|---|
| 3/8" Pitch .050 Gauge | |
| Bar Length | # of Drivers |
| 25" | 84 |
| 28" | 91 |
| 32" | 105 |
| 36" | 114 |
| **Use 7/32" round files** | |

| Common STIHL Parts | |
|---|---|
| Part Description | STIHL/Mfg Part # |
| E clip | 9460 624 0801 |
| 7 tooth Rim Sprocket | 0000 642 1223 |
| Sprocket Washer | 0000 958 1032 |
| Needle Cage Bearing | 9512 933 2380 |
| HD Air Filter | 0000 120 1654 |
| Fuel Filter/Pick-up body | 0000 350 3504 |
| Spark Plug (NGK) | 0000 400 7000 |
| Tank Vent | 0000 350 3504 |
| 91 Driver Full Skip Round Ground, 3/8" Pitch, .050" gauge | 33RSF (91 drivers for 28") |
| 28" bar Rollomatic ES Widetip 91 drivers 3/8" pitch, .050" gauge | 3003 000 9638 |

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**Purging Instructions:**

1. Drain fuel tank completely
2. Run saw until it stops
3. Attempt restarting with choke on until saw fails to fire
4. Remove fuel tank cap and invert saw for 5 minutes
5. Remove spark plug
6. Pull starter cord until piston is at lowest point in cylinder

# Fuel Mixture Information

**Mark, date and label all mixed fuel**.

If available, use 89+ octane, non-ethanol fuel for saws and ATV/UTV.

Use regular, 87—89 octane, fuel for pumps.

Mark III pumps use 50:1 mixed fuel

### 2-CYCLE MIX QUANTITIES (Ounces)

| Mix Ratio | Gasoline Quantity | | | | |
|---|---|---|---|---|---|
| | .5 gal | 1.0 gal | 2.0 gal | 2.5 gal | 5 gal |
| 16 : 1 | 4.0 | 8.0 | 16.0 | 20.0 | 40.0 |
| 20 : 1 | 3.2 | 6.4 | 12.8 | 16.0 | 32.0 |
| 24 : 1 | 2.7 | 5.4 | 10.7 | 13.4 | 27.0 |
| 32 : 1 | 2.0 | 4.0 | 8.0 | 10.0 | 20.0 |
| 40 : 1 | 1.6 | 3.2 | 6.4 | 8.0 | 16.0 |
| 50 : 1 | 1.3 | 2.6 | 5.2 | 6.4 | 12.8 |

### MIXING GUIDE: 3:1 SLASH MIX - 5 GALLONS

| # of cans | 3 Parts Diesel Stop fuel pump@__ gal: | 1 Part Gasoline Stop fuel pump@__ gal: |
|---|---|---|
| 1 | 3.75 | 1.25 |
| 2 | 7.5 | 2.50 |
| 3 | 11.25 | 3.75 |
| 4 | 15.00 | 5.00 |
| 5 | 18.75 | 6.25 |
| 6 | 22.50 | 7.50 |
| 7 | 26.25 | 8.75 |
| 8 | 30.00 | 10.00 |

| | |
|---|---|
| 1 CUP = | 8 ounces |
| 1 PINT = | 2 Cups<br>16 Ounces |
| 1 QUART = | 4 Cups<br>2 Pints<br>32 Ounces<br>.946 liters |
| 1 GALLON = | 4 Quarts<br>128 Ounces<br>3.785 liters<br>8.33 lbs |

## Drip Torch Fuel

**Rule of Thumb:** 1 lighter will generally use 1 full torch per 45-60 minutes of lighting.

Please use minimum fuel needed especially if fuel must be carried long distances.

! - CHECK TORCH COMPNENTS—!

Ensure all torch components match and rings screwed on fully

# Fuel Consumption Rates

Below are rough estimates designed for ordering and planning purposes only. Actual rates will vary based on fuel type, fuel load, crew configuration and mission.

Chainsaw fuel use based on Fuel Model 10 (timber).

Always refuel on bare ground, away from active fire, hot exhaust, or any sparks.

| Saws | Gas Used Per Hour | Oil Used Per Hour | 20 Person Crew Fuel Carried | Additional Fuel Required |
|------|-------------------|-------------------|------------------------------|--------------------------|
| 2 | ½ gallon<br>2 ½ -3 siggs | ⅛ gallon<br>¾ -1 sigg | 30 gas/10 oil Siggs<br>7.5 gal. gas/2.5 gal. oil | N/A |
| 3 | ¾ gallon<br>4 - 4 ½ siggs | ¼ gallon<br>1 ¼ siggs | 30 gas/10 oil Siggs<br>7.5 gal. gas/2.5 gal. oil | Generally none |
| 4 | 1 gallon<br>5 - 6 siggs | ¼ + gallon<br>1 ½ siggs | 30 gas/10 oil Siggs<br>7.5 gal. gas/2.5 gal. oil | 1 + dolmar |
| 5 | 1 ¼ gallon<br>7 + siggs | ½ gallon<br>2 + siggs | 30 gas/10 oil Siggs<br>7.5 gal. gas/2.5 gal. oil | 2+ dolmars |

**Pumps**

**Mark III** - Use 50:1 fuel mix.

**Fuel consumption** = 5 gallons/ 3.5 hours or approximately 15 gallons/ shift.

**Shindaiwa** - Generally use 20:1 fuel mixture for cache pumps, but can use 50:1 saw mix. Four stroke pumps use straight gas, and will have a separate oil fill. **Fuel consumption** = approximately 5 gallons/ shift.

## Mark III Set Up

- When ordering a Mark III, **<u>specify with kit</u>**. Order spare pumps if the operation depends on water.
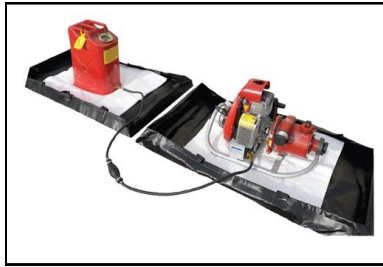


- Locate pump near water level to keep suction lift as low as possible. Make a flat platform for pump.
- Unfold berms and ensure sides are fully extended.
- Place absorbent pads in berms. In rocky terrain, use two pads in pump berm.
- Place pump in one containment berm and fuel can(s) in the other.

- Locate fuel cans as far away from hot engine parts as possible; orient pump so exhaust does not vent directly on fuel can. Store excess fuel away from water source.
- Secure pump and fuel can with cord to prevent vibration creep.
- Connect suction hose to foot valve and pump (wrench-tight).
- Place foot valve at least one foot under water. Do not place foot valve directly on sandy or muddy stream beds. Use pack frame, burlap, buckets, etc. to protect foot valve from debris.
- Prime the pump head by using either the hand primer or by filling with pail. Fill to the brim of prime port and wrench tighten cap.



- Connect short hose (pigtail) to discharge side of pump, and check and bleeder valve to pigtail.
- Utilize 1" port on check & bleeder valve or a 1.5 " gated wye to re-circulate

## Mark III Fueling

- If fuel is pre-mixed (red or greenish colored), then no mixing is required. (Alaska provides pre-mixed fuel.) Use a strip of paper to test for oil residue.
- If fuel is straw or clear colored then mix fuel with 2 cycle oil according to Manufactures' recommendation of **20:1** (for every 5 gallons of gas add approximately 1 quart oil):

    - Pour approximately one gallon of gas into pump-adapted can.
    - Add appropriate amount of 2 cycle oil to gas then shake can vigorously.
    - Add remainder of gas and shake can.
    - **Label mixed fuel, and store mixed fuel away from unmixed fuel.**

**When refueling:**
- Wear eye protection and gloves.
- Fuel spare can away from hot exhaust.
- Do not operate a radio or any other portable electronic device such as a cell phone.
- Replace gas absorbent pads as needed by placing them in garbage bags and dispose of per local protocol.
- If a spill occurs or gas enters the "natural" water source, notify supervisor and resource advisor immediately. Spill containment kits are available at

For Mark III operation, generally operate pump at full throttle and adjust pressure with pressure relief valve or gated wye.

## Mark III Start-up And Operation

1) Open air vent on top of fuel can.
2) If engine is cold move choke lever to start position. If engine is warm move choke to run position.
3) Move throttle lever to start/ warm up position.
4) Slowly pump fuel bulb until fuel mixture (in clear fuel tube) is just touching bottom of carbu-retor.

**Caution: Follow this step carefully to avoid flooding the engine.**
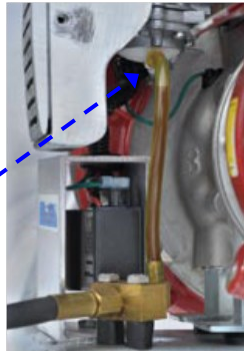
5) If pump is equipped with an on/off switch, turn switch on.
6) Ensure reset rod is pushed in.

7) Pull starter rope with short quick pulls (typically 2 to 4 pulls) until engine 'pops'.

**Caution: Several consecutive pulls of rope with choke in start position (after engine 'pops') will flood the engine.**

8) Immediately set choke lever to run posi-tion.
9) Pull starter rope approximately 1 to 3 more times and engine should start.
10) **Allow engine 2 minutes to warm up** (throttle lever should still be at start/warm up

For Mark III operation, generally operate pump at full throttle and adjust pres-sure with pressure relief valve or gated wye.

## Mark III Operation And Shut Down



- Water must be flowing through the pump head at all times. Crack nozzles or open check and bleeder valve.
- Grease pump head with one squirt of grease once a shift (or every 8 hours) at grease/zerk fitting.

### Shut Down
- Allow engine to idle for one minute.
- Move the throttle to the "stop" position.
- At end of shift remove fuel line from base of fuel can; allow engine to run out of gas.

## If pump will not start or run follow these steps:

**1)** On the Mark III, check the overspeed reset rod (see page 33). If rod is pushed in, move on to 2. If rod is out the pump has lost its prime. Do not attempt to restart pump until the problem is located and corrected; check for these problems:
- Suction hose connections are leaking.
- Suction hose is defective.
- Priming cap is loose.
- Foot valve not fully submerged in water source (1 foot minimum)



**2)** Check the spark plug by removing it from the engine. If the spark plug electrode is dry, move on to 3.
If spark plug is wet with fuel, the engine could be flooded.
Follow these steps:
**Place spark plug on top of cylinder head with spark plug**

## Mark III Troubleshooting

- Remove fuel supply line from engine.
- Remove crankcase drain plug and copper gasket from engine block to drain excess fuel.
- Reinstall new or clean spark plug.
- With choke and throttle in full open (run/run) position, pull starter cord several times until fuel is exhausted.
- Reinstall crankcase plug with copper gasket.

**3)** If the spark plug looks normal, move on to 4. If the spark plug has an excess of carbon on the electrode replace the spark plug and try to start.

**4)** Check for ignition spark:
- Ensure spark plug is grounded (see page 34).

<span style="color:red">**WARNING:**</span>
<span style="color:red">**FIRE/EXPLOSION HAZARD**</span>

- Crank engine and look for spark across spark plug gap. The plastic cover of the IRPG is approximately .020" thick and can be used to check the gap if gauge is not available. Do not use a dime to check the plug gap.

If there is an ignition spark, move on to 5.
If there is no spark, pump will need to be repaired.

## Mark III Troubleshooting

**5)** Check fuel system for these problems:
- Loose connections; fuel leaking
- Fuel can is not vented
- Fuel supply line defective
- Water or dirt in the fuel system

**6)** Use flagging to identify any mechanical problems with pump.

## Water Handling Information

- Consider the distance and elevation change (+ or -) to determine the equipment needs and most effective set-up. Max output pressure of a Mark III is 380 psi = 760ft rise in elevation (1psi/2ft)

- Plan for additional spare hose when ordering.

- A standard progressive hoselay requires: 1-1.5 "gated wye, 1-1.5" to 1" reducer, 100 ft of 1" hose, and 1– 1 "nozzle for every 200 Feet.
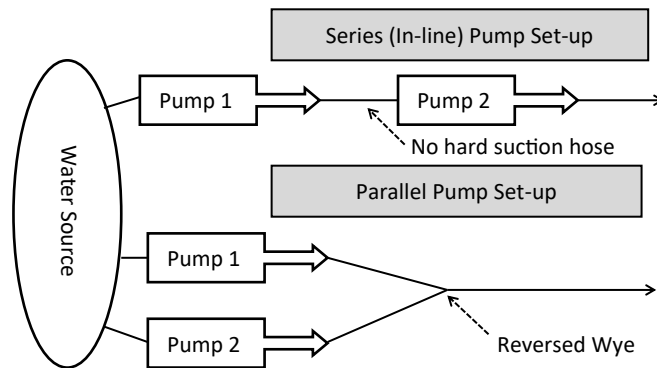
# Series Pump

2 pumps are connected inline (the distance between the pumps will vary based on slope). This will increase pressure for uphill hoselays.

Pump 1 (lower)

1. Set-up the lower pump near the water source, and attach 1.5" pigtail with a pressure relief valve and check and bleeder valve to the pump discharge.
2. Run lower pump at maximum pressure to push water uphill.

Pump 2 (upper)

1. Place the upper pump where water flow is adequate for pump operation, but maximum elevation is achieved. Some testing may be required (the trunk must still be firm).
2. Connect trunk hoselay to the suction port on pump with 1.5" double female coupling **(do not use hard suction hose) .**
3. Connect a 1.5" gated wye to the pump discharge using a pig tail. Use this gated wye to adjust the water flow through the upper pump. Add a check and bleeder valve above the gated wye, and connect the uphill hose lay to the check and bleeder valve.

*Operation:*

Operation requires a pump operator at each location.

1. Start pump 1 (lower) and allow to warm up then bring to full throttle.
2. Once water reaches pump 2, use the gated wye on pigtail to reduce water flow through pump 2. Start pump 2 (upper) and allow it to warm up (adequate flow to pump 2 is required before starting).
3. Slowly increase the speed of pump 2 (upper) until cavitation is imminent, (intake hose will flatten) then back off on throttle. Use gated wye to control flow from pump 2 (upper) and run pump at highest possible RPM.
4. Constant attention will be required to both pumps and all the hardware between them to prevent cavitation of upper pump.

**Note: If possible, separating the pumps with a middle Fold-a-tank will make**

For Mark III operation, generally operate pump at full throttle and adjust pressure with pressure relief valve or gated wye.

## Parallel Pumping Procedures:

2 pumps from the same water source are connected with a gated wye into a single hoselay. This will increase volume.

*Set-up:*

1.  Set–up 2 pumps at the same water source.  Keep both pumps close together for ease of operation.

2.  Attach a check and bleeder valve to each pump using a 1 1/2" pig tail. This will prevent head pressure.

3.  Use a Siamese gated-wye (may not be readily available), or use 2 double female couplings and a double male coupling to invert a regular gated-wye.  This will connect the two pumps into one hose-lay.

*Operation:*

1.  Start each pump using the standard operation of a Mark III.

2.  An operator should be near the pumps to ensure proper operation.

**Note:**  Ensure that you have a large water source, as running two pumps will require more water.

Either pump can be started or stopped at anytime.

## Downhill Pumping Procedures:

1.  Substitute a gated-wye for the check and bleeder valve.

2.  Close the first gated-wye down as much as possible and close all inline wye's to at least half.

**Note:**  Each nozzle operator will need to adjust their gated-wye to maintain

## Whaling Hose Pack



The Whaling Hose Pack consists of 2– 100' lengths of 1 1/2" hose, 2 -100' lengths of 1" hose, 2 -1" combination nozzle and 2-diverter tee's.



The pack is built by attaching the diverter tee to the male end of the 1 1/2" hose. (The 1 1/2" hose should be rolled from the female end) The 1" hose is attached to the diverter tee (The 1" hose should be double rolled) and a 1" combination nozzle attached and placed in the tray as shown.

## Whaling Hose Pack



The 1 1/2" hose and 1" hose is installed in the tray in a horseshoe load and the bends are alternated. Flagging tape can be used to attach the 1" hose to



Continue to install hose into to tray until full and place 1 1/2" female coupling into the center of the hose load. Insert the tray into the Whaling Hose Pack and slide hose off of tray into bag to complete. Repeat to complete one Whaling Hose Pack.

# Remote Cabin Protection

1. **Does potential fire behavior allow adequate time for prep?**

2. **Adequate safety zones ?**

3. **Identify fire hazards that need to be mitigated to protect cabin:**

   - Are the roof and/or eaves clear?

   - Are there building materials or fire wood stacked against the cabin?

   - Are there trees, snags, or other vegetation that pose a direct hazard to the cabin?

   - Hazmat, personnel safety concerns, and available water supply

   - Proceed with cabin protection only if comfortable with conditions, mission, supplies, and personnel assigned

**Sprinkler system set up tips**

Use your judgment based on circumstance, structure, and available materials.

- **Stake sprinklers securely**. This is critical with NIFC PVC sprinklers

- Use poles, cord or short ladders to avoid working on roof

- Take time to plan for best coverage

- Depending on pump, water supply, elevation, hose diameter and sprinkler heads, approximately 10-15 sprinklers per pump

- Sprinkler coverage should wet all surfaces of the structure

- Set sprinkler heads on poles, tripods, or stands to get them above ground/ cabin

- Sprinklers placed at the structure corners or roof apex may provide the best coverage

- Vary heights to provide the best coverage

- Adjust sprinklers for long range spray or short range mist

- Protect pump, fuel, and supply hoselay from fire as well

## Structure Protection

Structure wrap usually comes in 5' x 150' rolls (750 ft$^2$).  Sheets of 10' x 50' are also available (500 ft$^2$).

**Suggested order list:**

- Ladders (min. 2) tall enough to reach roof peak

- Staplers and staples (order extra)

- Scissors

- Needle-nose pliers

- Permanent markers

- 3" Aluminum tape (avail in rolls of 360')

**Considerations:**

- Take  time to plan (Will you still need access to the inside of the building?

- Plan wrapping so seams do not catch embers. Generally complete roof first, then start from bottom of walls and work up to eaves.

- Consider likely wind/fire-front direction when deciding how to overlap vertical seams.

- Use aluminum tape (duct tape only as necessary) on seams to reduce the number of staples. **Use caution as tape edges are sharp and will cut fingers.**

- Draw windows on outside of wrap to prevent breaking them in the process of wrapping & unwrapping.

- Working on the roof should be avoided, especially if roof is high, steeply pitched or there is a question of ability to bear weight.

- Consider the unwrapping stage when deciding how many staples to use.

# Structure Triage Checklist

| Address or Description:_____ |
|---|

| | | YES | NO |
|---|---|---|---|
| **DRIVEWAY** | Too narrow or steep to back in -or-   Branches overhang driveway -or-   Down-dead fuels | | |
| **ROOF** | Already involved in fire. | | |

If **YES** checked for either above, **STOP!** Write off!

If **NO** safety zone present, move to non-defensable catagories.

| | | YES | NO |
|---|---|---|---|
| **DRIVEWAY** | Dead-end & longer than 200 ft | | |
| **ROOF** | Combustible (asphalt or wood) | | |
| **ROOF** | Wood shakes | | |
| **TREES** | Overhang roof | | |
| **TREES/BRUSH** | Not thinned in area within 30' of structure | | |
| **VEHICLES** | Parked outside within 30' of structure | | |
| **SLOPE** | More than 20% anywhere within 30' of structure | | |
| **SLOPE** | More than 40% anywhere within 30' of structure | | |
| **DECK/STILT** | Not enclosed underneath (to ground) | | |
| **POWER LINE** | Overhead within 30' of structure | | |

# of Yes                     Number of **YES** checked_____

| | |
|---|---|
| 0 - 2 | **DEFENSABLE-STAND ALONE** |
| 3 - 5 | **DEFENSABLE-PREP AND HOLD** |
| 6 - 7 | **NON-DEFENSABLE-PREP AND LEAVE** |
| 8 - 10 | **NON-DEFENSABLE-RESCUE DRIVE-BY** |

**AIRCRAFT USAGE GUIDE**

Aircraft Typing:

**Helicopters**

| Components | Type 1 | Type 2 | Type 3 |
|---|---|---|---|
| Payload at sea level (lbs) | 5,000 | 2,500 | 1,200 |
| Water capacity (gal) | 700 | 300 | 100 |
| Examples | CH-47 Chinook | Bell 204, 205, 212 HP | Bell 407, Astar B3 |
| Helitanker | Fixed Tank, 1,100 minimum gallon capacity | | |

**Airtankers**

| Components | VLAT | Type 1 | Type 2 | Type 3 | SEAT |
|---|---|---|---|---|---|
| Minimum capacity (gal) | >8,000 | 3,000-5,000 | 1,800-2,999 | 800-1,799 | <800 |
| Examples | DC-10, B-747 | Bae-146, MD-87, C-130, B-737 | Q-400, P-3 | S-2T, AT-802F | Air Tractor |
| Water Scoopers | CL-215 and CL-415.  Scoopers work in pairs.  Very effective if a large body of water is nearby. | | | | |

**Retardant Coverage Levels**

| Coverage Level | Fuel Model | Fuel Description |
|---|---|---|
| 1 | 1 | Annual Perennial Western Grasses, Tundra |
| 2 | 2, 8, 9 | Conifer w/Grass, Shortneedle Closed Conifer, Summer Hardwood, Longneedle Conifer, Fall Hardwood |
| 3 | 2, 3, 5, 11 | Sagebrush w/Grass, Sawgrass, Intermediate Brush, Light Slash |
| 4 | 10 | Shortneedle Conifer (Heavy dead litter) |
| 6 | 4, 6 | Southern Rough, Black Spruce, Cured Intermediate Brush |
| >6 | 4, 12, 13 | Mixed Chaparral, Medium Slash, Heavy Slash |

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# Helicopter Long Line Operations

**RIGGING POSTER**
**LONG LINE REMOTE HOOK**

**H A Z A R D   A R E A**

Cargo Hook

Long Line

**Preferred to connect lead line to swivel**

Remote Hook

Swivel

Lead Line

Heavier, more durable loads rigged below OR FUEL/HAZMAT

Lighter, more fragile cargo OR FOOD

Cargo Net

Cargo Net
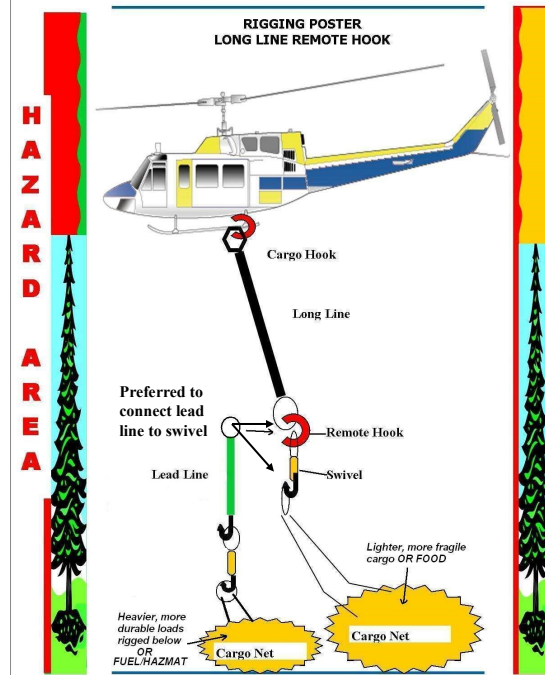
**Every load requires a swivel**

For daisy chains, it is preferable that the lead line be connected to the upper swivel, which is then connected to the remote hook.  It is possible to connect the lead line to the remote hook directly as long as there are no more than two total rings connected to the remote hook and each net has a dedicated swivel.  For loads rigged as daisy chains on the ground, always attach the lead line (with swivel on the net) to the upper swivel.

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| Crew Weights | | Cargo | |
|---|---|---|---|
| Name- Est. Weight | Lbs | Item | Lbs |
| | | Saw | 25 |
| | | Tool Bundle | 25 |
| | | Spike Kit | 55 |
| | | Saw Spike Kit | 25 |
| | | Cubee (5 gal) | 40 |
| | | Case MREs | 25 |
| | | Sigg Bag (full) | 20 |
| | | Drip Torch (full) | 15 |
| | | 5 Gal. Jerry Can | 45 |
| | | Batteries, Case | 15 |
| | | Mark III w/ Kit | 150 |
| | | Shindaiwa Pump | 25 |
| | | Bladder Bag (full) | 45 |
| | | Steel Choker | 15 |
| | | 72-gal Blivet | 615 full |
| | | 72-gal Blivet | 15 empty |
| | | Crash Rescue Kit | 25 |
| | | Fire Extinguisher | 40 |
| | | Cargo Net | 20 |
| | | 12' Lead Line | 10 |
| | | Swivel | 5 |
| | | Remote Hook | 20 |
| | | Longline 50' / 100' | 25 / 50 |
| | | | |
| Medical Gear | | Liquid Weights | |
| SKED / KED / KTD | 30 | 1 gal Water | 8.3 |
| Backboard | 35 | 1 gal Jet A | 7 |
| EMT Trauma Bag | 25 | 1 gal Gasoline | 6 |
| All weights are estimates only.  Use a scale if available. | | | |

| ORDERING CHART/MANIFEST | |
|---|---|
| **Item/Name** | **Weight** |
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| **Total** | |

## Helicopter Procedures

- Tape tool edges and tape into bundles of approximately 4-5 tools.

- Do not bag saw powerheads unless instructed by helitack. Saws may have to be purged for flight.

- Saw chain and dogs will be padded with chaps or sheaths and taped securely.

- All Siggs will be placed in Sigg bags if available.

- All buckles on packs will be snapped, straps and webbing secured, and water bottle pouches tightened.

- Fusees and files need to be completely inside packs.

- Radios will be turned off and carried or padded fully inside packs.

- All gear to be brought on the flight needs to be neatly lined out

- If helitack is available, manifest and briefing will be conducted by helitack. Pay attention to the safety briefing.

- If no helitack are present a qualified HECM from the crew will be assigned to manifest the flight loads.

- Organize equipment and personnel based on flight, and stay in designated waiting area.

- Have all flight PPE available.

- Any additional gear being long-lined will be stacked neatly. Manifest, estimate weight, label destination and date all loads.

- If we are building nets, fiber tape or connect buckles of upper packs to ensure they are not lost.

## Fixed Wing Flight Procedures for Contract Aircraft

**\*Crewmembers are limited to 55 lbs (60 for Sawyers /EMTs).**

- Specialty tools will be taped/padded, and placed in a tool bag per inventory.

- Saws will be purged and put into flight bags.  Fuel containers must be new or completely purged.  Chaps must be clean and free of fumes.

- Empty all water, remove fusees and any fusee residue, discard any open MRE heaters, and remove any firing equipment or flammable items.

- Once bags are weighed, do not add any additional items.

- Line gear, hard hat, and Nomex shirt will be placed in a flight bag.

- All other gear will be securely packed in the overnight bag with nothing hanging outside either bag, and all straps tightened and secured except travel bag backpack straps which will be left accessible.

- Leave all knives, Leatherman tools, and other objects that could be mistaken as a weapon in your flight bag. Lighters (non-Zippo) can be carried on.

- All gear needs to be neatly stacked in two rows while waiting for the flight.

- When instructed to load, each person will take their bags and walk in a single file line to the cargo door of the plane.  Eye and ear protection will be required if the plane is running while loading/unloading.

- 2 load masters will be inside the cargo area of the plane loading gear.

- The rest of the crew will line up in two staggered rows facing each other, and chain the gear, starting with travel bags. Communicate "last travel bag" and "last flight bag."

- After gear has been loaded the crew will RTO and board the plane.

- When boarding charter flights, follow flight crew instructions or fill the seats in the back first.  We will fly sitting as a crew with no empty seats.

- For unloading, the crew will form two rows and chain out the gear.  Each person will take a travel and flight bag and place them carefully at their feet.

- Once all gear is out and accounted for, each person will take a travel bag and flight bag, RTO and walk in a line to a designated area.

- For commercial flight, additional security restrictions will apply.

## Spike Camp

Much more planning and coordination is required while spiked out.  Ensure that all needs are ordered well in advance.

**Recommended spike supply items:**

(**Bold items are critical**).

- Spike camp kit (Miscellaneous comfort items such as: coffee pot, toilet paper, tinfoil, fiber tape, garbage bags, bug spray, soap).
- Saw spike kit (Miscellaneous parts for saws, extra chain, and fuel mix).
- Extra tools
- Jerry of saw gas w/ hose
- Bar oil
- Dolmars
- **Emergency Medical Kit and SKED or backboard w/ straps**
- **Sat Phone in waterproof case**
- Cubees
- MRE's
- Case of AA Batteries
- If a food storage area, ensure all food items are in bear proof containers or hung away from camp (pg 59.)

All gear will be stacked in an orderly fashion, well marked, and in a location specified by a supervisor immediately upon arrival at the helibase or long-line location.

# Spike Camp (cont.)

**Daily Order Needs (Standard for 20 people)(Standard for 5 people)**

- 12 (3) QBs of water (3+ gallons/person/day)

- 6 (2) Cases of MRE (3+ MRE/person/day)

- 2 (1) Cases of Gatorade (not required)

Always assess water consumption and adjust ordering as needed

Note: When ordering it may be helpful to place orders for supplies for 2 days at a time. When possible do not exceed 2 days worth of supplies, because when the crew leaves spike or moves spike all the supplies must be moved as well.

**Typical Needs after 2-3 days in Spike Camp**

- 1 Flat of batteries

- 1 Box of garbage bags

- 5+ Rolls toilet paper

- Saw fuel and bar oil.

- Any broken or damaged equipment replacement

**Keep in mind that durations of spike can vary greatly and it is not uncommon to spike for 7 or more days at a time. Orders will not be placed for personal items such as tobacco. Make sure when you leave the rigs you have all the personal items you will need for up to 14 days. This includes prescription medications, clothing, and any personal items. PLAN ahead and be PREPARED.

Spike Camp (cont.)

Proper storage of food, refuse and other attractants means:

– in a hard-sided vehicle, or
– in a *certified* food storage container, or
– as shown below:

at least 4 ft

at least 10 ft

at least 4 ft

RECOMMENDED
at least 100 yards
from backcountry campsites

56
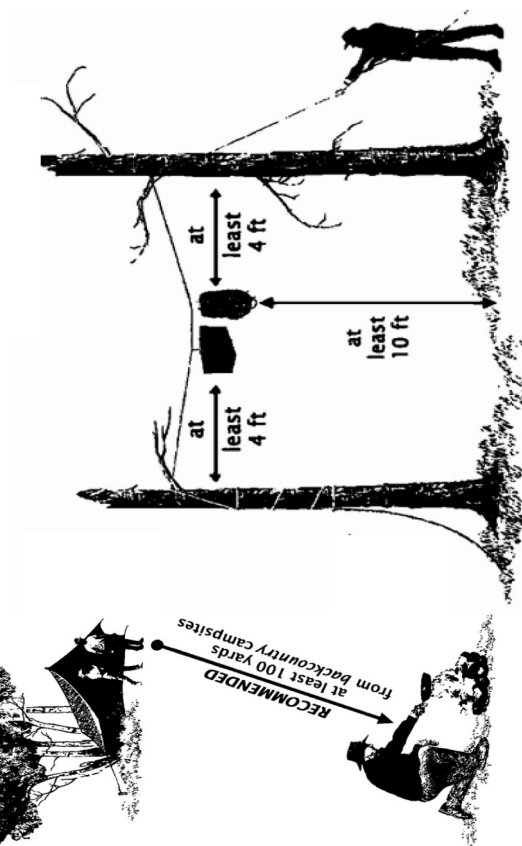
# Avenza User Guide

<u>**Avenza App with Pro User Account:**</u>

Register device: enter "Settings", tap "Enter Account Details."

-Work email—this must be a @usda.gov.  If you do not have one, enter your supervisors.

-Username—enter the license key: TR4A-GTN8-M7PP-BHVG-5SN6

-Password—LEAVE BLANK

-Full Name—If you have a @usda.gov email, enter your first and last name.  If you do not have a @usda.gov email, enter your name and email (ex. John Smith jsmith@gmail.com)

-Organization—Enter home unit (region and forest) 0102

Log in—Done

<u>**Adding Maps:**</u>

On the "My Maps" screen tap the **+**.

-Select "Download or import a map"

-To add a map from a QR code, tap the QR code icon and scan the code.  To add a map that you have saved to your device, select "From Storage Locations" and navigate to the folder.

**<u>Mapping with Avenza</u>:** (There will be some slight differences between Apple and Android)

Creating a waypoint:

-While in a map, move the cursor to the location and tap the pin

-This will bring up the "Add Placemark" to change the name and see the associated data.

-This is also the screen to enter the coordinates from a waypoint given to you.  Tap on "Location" and enter the new coordinates.

Creating a track log (map a fire):

-Click on the pencil/ruler.

-Select "Record GPS Tracks"

-Tap "Start Tracking"

-When finished, tap "Stop Tracking"

-To edit your track, tap on the track.

-To get the acreage of your track, tap "convert to area." This creates a polygon from your track log, which can be shared.
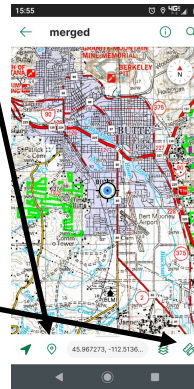
**Sharing Tracks and Waypoints:**

Open your map and tap on the icon with 3 layers.

On the map layers screen, tap the 3 lines

Select "Export"



Ensure your format is KML unless told otherwise.  Then tap "Export"  This will bring up options to share the file.  The easiest is to use your email associated with the phone.
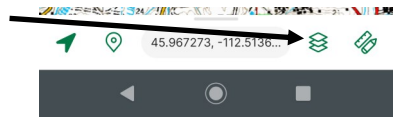
## B-D PDF Map QR Codes

Beaverhead Deerlodge Central East 2013



Beaverhead Deerlodge North West 2013



Beaverhead Deerlodge Central West 2013



Beaverhead Deerlodge South East 2015



Beaverhead Deerlodge North East 2015



Beaverhead Deerlodge South West 2015

# Compass Navigation

## Declination

Declination is the difference between true north and magnetic north. If no declination is set the compass will indicate magnetic north. GPS units use true north unless changed in the settings. For a compass to read true north you must offset it by a specific degree which will depend on your location. A declination map is on the following page to assist in determining the declination.

A GPS unit can also show the declination for your location.

### Compass Use

1. Set the declination with small set screw

2. Obtain the bearing to follow (from aircraft, lookout or map)

3. Set the bearing on the compass

4. Turn your body until north arrow is aligned with direction of travel arrow

5. Hold compass flat at eye level and use mirror to check bearing on dial. Use sighting notch to line up an identifiable nearby object

6. Walk to that object and repeat

7. Do not use compass inside or on hood of a vehicle, or near metal objects (tools and belt buckles)

# World Magnetic Model - 2020 Magnetic Declination

NOAA National Centers for Environmental Information (NCEI)
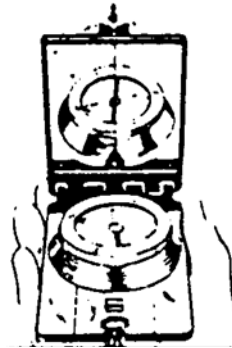
# Township/Range System

**Township** Lines run EAST to WEST six miles apart.

**Range** Lines run NORTH to SOUTH six miles apart.

Within each township are 36 sections, each one mile square. Each section contains 640 acres. ↓

| | | | | | |
|---|---|---|---|---|---|
| 6 | 5 | 4 | 3 | 2 | 1 |
| 7 | 8 | 9 | 10 | 11 | 12 |
| 18 | 17 | 16 | 15 | 14 | 13 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 30 | 29 | 28 | 27 | 26 | 25 |
| 31 | 32 | 33 | 34 | 35 | 36 |

**Section Numbers in a Typical Township.**

Within each section, the land is referred to as half and quarter sections. A one-sixteenth division is called a quarter of a quarter, as in the NW1/4 of the NW1/4.

The descriptions are generally read from the smallest division to the largest.

**Third Principal Meridian**

**Range Line**

**Base Line**

**Township Line**

| | | | |
|---|---|---|---|
| T2N R2W | T2N R1W | T2N R1E | T2N R2E |
| T1N R2W | T1N R1W | T1N R1E | T1N R2E |
| T1S R2W | T1S R1W | T1S R1E | T1S R2E |
| T2S R2W | T2S R1W | T2S R1E | T2S R2E |
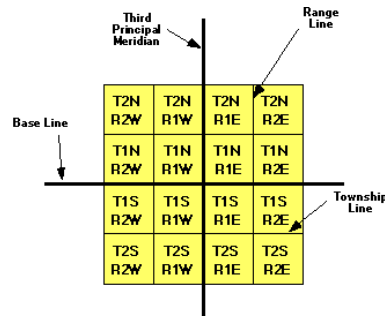
There may be corrections or odd shaped sections. State boundaries change reference grids so may result in confusion near state boundaries.

| NW 1/4 of NW 1/4 | NE 1/4 of NW 1/4 | NE 1/4 =160 acres | |
|---|---|---|---|
| SW 1/4 of NW 1/4 | SE 1/4 of NW 1/4 | | |
| N 1/2 of SW 1/4 | | W 1/2 of SE 1/4 | E 1/2 of SE 1/4 |
| S 1/2 of SW 1/4 | | | |

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# Latitude and Longitude

The Latitude and Longitude may be shown in the following formats:

| Format | What It Looks Like | How You Say It (Radio Etiquette) |
|---|---|---|
| *Degrees Decimal Minutes<br>*Aircraft*<br>(ddd°mm.mmm') | 44° 18.586'<br>120° 51.175' | "Four-four degrees, one eight decimal (or point) five eight six minutes." |
| Degrees Minutes Seconds<br>*Maps*<br>(ddd°mm' ss.s") | 44° 18' 34.5"<br>120° 51' 10.3" | "Four-four degrees, one eight minutes, and three four decimal (or point) five seconds." |
| Degrees Decimal Degree<br>*Seldom used*<br>(ddd.ddddd°) | 44.30971°<br>120.85291° | "Four-four decimal (or point) three zero nine seven one degrees." |

*This is the Butte/Jefferson Zone preferred format.

**If you do not have a GPS:**

To convert Degrees Minutes <u>Seconds</u> to Degrees Decimal Minutes, divide seconds by 60.
Example:  48° 20' <u>30"</u>   →  (<u>30"</u>)/60 = .5'   →   48° 20.5'

To convert Degrees <u>Decimal Minutes</u> to Degrees Minutes Seconds, multiply hundredths
(.5) by 60.  Example:   48° 20.5'   →   0.5" x 60 = 30"   →   48° 20' 30"

---

**One degree of latitude or longitude = 60 minutes (60')**

**One minute of latitude or longitude = 60 seconds (60")**

**A 7.5 minute quad covers 7.5 minutes of longitude and 7.5 minutes of latitude**

---

**Aviation Datum = WGS 84**
**Units: Degrees Decimal Minutes**

# Conversion Units

| UNITS OF MEASURE | |
|---|---|
| **1 inch =** | 2.54 centimeters |
| **1 foot =** | 0.3048 meters |
| **1 Meter =** | 3.28 feet |
| | 39.37 inches |
| **1 Kilometer =** | 0.623 miles |
| | 1,093.6 yards |
| | 3280.8 feet |
| **1 Chain =** | 66 feet |
| | 20.11 meters |
| **1 Acre =** | 10 square chains |
| | 208.7 x 208.7 feet |
| | 43,560 sq. feet |
| **1 Mile =** | 5280 feet |
| | 80 chains |
| | 1.6 kilometers |
| **Township =** | 36 square miles |
| **Section =** | 1 square mile |
| | 640 acres |

| MAP SCALE CONVERSION | | |
|---|---|---|
| **Map Scale** | **1 inch on the map=** | **1 mile on the earth = __ inches on the map** |
| 1:5,000 | 416.67 feet 127.00 meters | 12.67 |
| 1:10,000 | 833.33 feet 254.00 meters | 6.34 |
| 1:12,500 | 1,041.66 feet 317.00 meters | 5.07 |
| 1:20,000 | 1,666.70 feet 508.00 meters | 3.17 |
| **1:24,000 7.5" Quad** | 2,000 feet 609.6 meters | 2.64 |
| 1:25,000 7.5" Quad | 2,083.30 feet 635.00 meters | 2.53 |
| 1:50,000 | 4,166.70 feet 1,270.0 meters | 1.27 |
| 1:62,500 15" Quad | .986 miles 5206.1 feet 1586.8 meters | 1.014 |
| **1:63,360 Alaska Maps** | 5,280.00 feet 1,609.3 meters | 1 |
| 1:100,000 | 8,333.30 feet 2,540.0 meters | .634 |
| 1:250,000 | 20,833.00 feet 6,350.0 meters | .253 |
| 1:500,000 | 41,667.00 feet 12,700.0 meters | .127 |

| | | |
|---|---|---|
| **1 Cup =** | 8 ounces | |
| **1 Pint =** | 2 cups | |
| **1 Quart =** | 4 cups 2 pints 32 ounces | |
| **1 Gallon =** | 4 quarts 128 ounces 3.785 liters 8.33 lbs | |

## ICS Map Symbols

Completed Dozer Line

Proposed Dozer Line

Proposed Hand Line

Uncontaineded Fire Edge (teeth point in)

Contained Line

Division Break

Branch Break

ICP

Spot Fire

Helispot

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# Conversion Units

## Minutes to 100ths Conversion

| | | |
|---|---|---|
| 01″ = .02′ | 21″ = .35′ | 41″ = .68′ |
| 02″ = .03′ | 22″ = .37′ | 42″ = .70′ |
| 03″ = .05′ | 23″ = .38′ | 43″ = .72′ |
| 04″ = .07′ | 24″ = .40′ | 44″ = .73′ |
| 05″ = .08′ | 25″ = .42′ | 45″ = .75′ |
| 06″ = .10′ | 26″ = .43′ | 46″ = .77′ |
| 07″ = .12′ | 27″ = .45′ | 47″ = .78′ |
| 08″ = .13′ | 28″ = .47′ | 48″ = .80′ |
| 09″ = .15′ | 29″ = .48′ | 49″ = .82′ |
| 10″ = .17′ | 30″ = .50′ | 50″ = .83′ |
| 11″ = .18′ | 31″ = .52′ | 51″ = .85′ |
| 12″ = .20′ | 32″ = .53′ | 52″ = .87′ |
| 13″ = .22′ | 33″ = .55′ | 53″ = .88′ |
| 14″ = .23′ | 34″ = .57′ | 54″ = .90′ |
| 15″ = .25′ | 35″ = .58′ | 55″ = .92′ |
| 16″ = .27′ | 36″ = .60′ | 56″ = .93′ |
| 17″ = .28′ | 37″ = .62′ | 57″ = .95′ |
| 18″ = .30′ | 38″ = .63′ | 58″ = .97′ |
| 19″ = .32′ | 39″ = .65′ | 59″ = .98′ |
| 20″ = .33′ | 40″ = .67′ | 60″ = 1.0′ |

## Celsius / Fahrenheit

| C | F | C | F |
|---|---|---|---|
| 4 | 39 | 25 | 77 |
| 5 | 41 | 26 | 79 |
| 6 | 43 | 27 | 81 |
| 7 | 45 | 28 | 82 |
| 8 | 46 | 29 | 84 |
| 9 | 48 | 30 | 86 |
| 10 | 50 | 31 | 88 |
| 11 | 52 | 32 | 90 |
| 12 | 54 | 33 | 91 |
| 13 | 55 | 34 | 93 |
| 14 | 57 | 35 | 95 |
| 15 | 59 | 36 | 97 |
| 16 | 61 | 37 | 99 |
| 17 | 63 | 38 | 100 |
| 18 | 64 | 39 | 102 |
| 19 | 66 | 40 | 104 |
| 20 | 68 | 41 | 106 |
| 21 | 70 | 42 | 108 |
| 22 | 72 | 43 | 109 |
| 23 | 73 | 44 | 111 |
| 24 | 75 | 45 | 113 |

## Slope Percentage Table
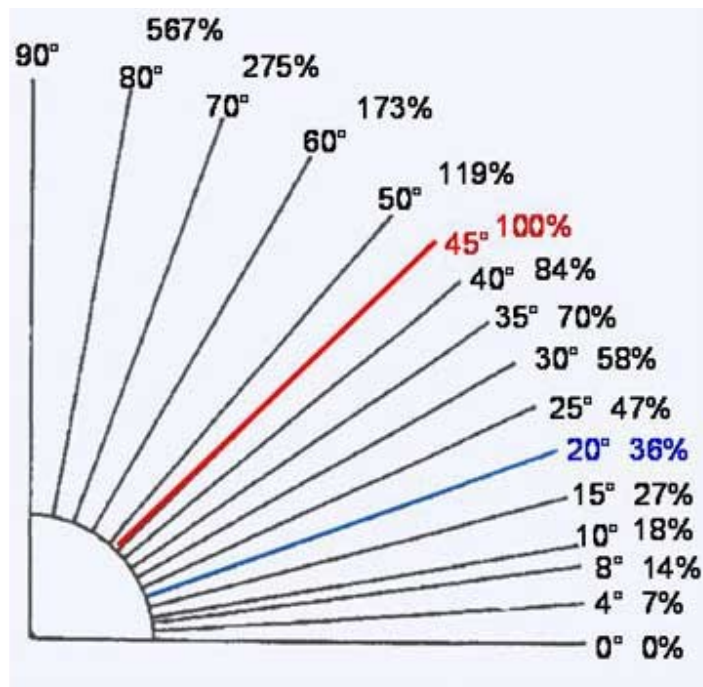


Slope can be calculated using the formula:

$$\frac{\text{Vertical Distance}}{\text{Horizontal Distance}} \times 100 = \% \text{ Slope}$$

Another way to write the slope formula is:

$$\frac{\text{Rise}}{\text{Run}} \times 100 = \% \text{ Slope}$$

# Weather and Fuels Information

## Sling Psychrometer Use

- Stand in a shaded, open area away from objects that might be struck during whirling.  If in open country, use your body shade to shade the psychrometer (be careful of hardhat brim).  If possible, take your weather observations over a fuel bed that is representative of the fuels the fire is burning in. Avoid warm vehicles, smoke, and the fire.

- If your sling has been in your pack, allow it to equilibrate in the shade for several minutes before taking weather.

- Face the wind to avoid influence of body heat on the thermometers.

- Saturate the wick of the wet bulb with clean, mineral free water (distilled).

- Ventilate the thermometers by whirling at full arms length.  Your arm should be parallel to the ground.  Whirl for 1 minute.

- Note the wet bulb temperature.  Whirl for another 40 or 50 seconds and read again.  If the wet bulb is lower than the first reading, continue to whirl and read until it begins to rise.  Read and record the lowest point.  If the wet bulb is not read at the lowest point, the calculated relative humidity will be too high.

### Common Issues:

- Incorrect reading of Rh chart (bottom number of most charts – Rh is NOT negative)

- Use of incorrect elevation on Rh chart or miscalculation of FDFM

- Not ventilating the psychrometer long enough to reach equilibrium

- Not getting the wick wet enough, or letting it dry out completely

- Holding it too close to the body or taking too long to read the thermometers

- Touching the bulb ends with hands while reading

- Not facing into the breeze

| Fuel Size Class | Diameter in inches |
|---|---|
| 1 hr | 0-0.25 |
| 10 hr | 0.25-1 |
| 100 hr | 1-3 |
| 1000 hr | 3+ |

**Rule of thumb:** Rh in % divided by 5 = estimate of FDFM
(If Rh is 25 then 25/5 = 5% FDFM

**Rule of thumb:** 10 hour fuel moisture = FDFM + 1
(If FDFM is 5, then 10 hour fuel = FDFM 5 + 1 = 6)

| WS FORM D-1 | | | | U.S. Department of Commerce |
|---|---|---|---|---|
| (1-2005) | | **SPOT REQUEST** | | NOAA |
| (Supersedes Previous Editions) | | (See reverse for instructions) | | National Weather Service |

**Please call the NWS Weather Forecast Office (WFO) when submitting a request and also after you receive a forecast to ensure request and forecast were received.**
**Please provide feedback to WFO on forecast.**

| 1. Time† | 2. Date | 3. Name of Incident or Project | 4. Requesting Agency |
|---|---|---|---|
| | | | |

| 5. Requesting Official | 6. Phone Number | 7. Fax Number | 8. Contact Person |
|---|---|---|---|
| | | | |

| 9. Ignition/Incident Time and Date | 12. Reason for Spot Request (choose one only) | 13. Latitude/Longitude: |
|---|---|---|

12. Reason for Spot Request (choose one only)
- ☐ Wildfire
- ☐ **Non-Wildfire** Under the Interagency Agreement for Meteorological Services (USFS, BLM, NPS, USFWS, BIA)
- ☐ **Non-Wildfire** State, tribal or local fire agency working in coordination with a federal participant in the Interagency Agreement for Meteorological Services
- ☐ **Non-Wildfire** Essential to public safety, e.g. due to the proximity of population centers or critical infrastructure.

**10. Size (Acres)**

**14. Elevation (ft, Mean Sea Level)**
Top:          Bottom:

**11. Type of Incident**
- ☐ Wildfire
- ☐ Prescribed Fire
- ☐ Wildland Fire Use (WFU)
- ☐ HAZMAT
- ☐ Search And Rescue (SAR)

**15. Drainage**

**16. Aspect**

**17. Sheltering**
- ☐ Full
- ☐ Partial
- ☐ Unsheltered

**18. Fuel Type:** __Grass __Brush __Timber __Slash __Grass/Timber Understory __Other_____
**Fuel Model:** 1,2,3    4,5,6,7    8,9,10    11,12,13    2,5,8

**19. Location and name of nearest weather observing station** (distance & direction from project):

**20. Weather Observations from project or nearby station(s):** (Winds should be in compass direction e.g. N, NW, etc.)

| Place | Elevation | †Ob Time | 20 ft. Wind | | Eye Level Wind. | | Temp. | | Moisture | | Remarks (Relevant Weather, etc) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dir | Speed | Dir | Speed | Dry | Wet | RH | DP | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| 21. Requested Forecast Period Date | 22. Primary Forecast Elements (Check all that are needed) *(for management ignited wildland fires, provide prescription parameters)*: | 23. Remarks (other needed forecast elements, forecast needed for specific time, etc.) |
|---|---|---|
| Start _____ <br><br> End _____ <br><br> Forecast needed for: <br> ☐ Today <br> ☐ Tonight <br> ☐ Day 2 <br> ☐ Extended | Needed: <br><br> Sky/Weather ☐ <br> Temperature ☐ <br> Humidity ☐ <br> 20 ft Wind ☐ <br>   Valley ☐ <br>   Ridge Top ☐ <br> Other (Specify in #23) ☐ | |

| 24. Send Forecast to: ATTN: | 25. Location: | 26. Phone Number: Fax Number: |
|---|---|---|

**27. Remarks (Special requests, incident details, Smoke Dispersion elements needed, etc.):**

EXPLANATION OF SYMBOLS:     † Use 24-hour clock to indicate time. Example: 10:15 p.m. = 2215; 10:15 a.m. = 1015
Indicate local standard time or local daylight time

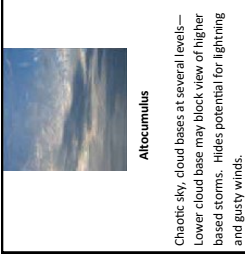**Fire Weather and Fire Behavior Impacts from Clouds (High Clouds)**

**High Clouds:** Cloud bases typically 16,000 - 50,000 feet.

Usually seen as indirect indicators of potential fire behavior.

Clouds in red may be of particular concern.

**Cirrus Streaks**



Single or multiple bands across sky indicating Jet Stream aloft—Possible instability or surface winds increasing fire behavior.

**Cirrus**



Dense, in patches, not increasing, or with tufts—No significant fire weather or fire behavior expected.

**Cirrus**



Anvil shaped remains of a thunderstorm—Watch for gusty winds from nearby decaying thunderstorms.

**Cirrus**



In hooks or filaments, increasing, becoming denser—Often indicates cold air aloft. Watch for possible instability leading to more active fire.

**Cirrostratus**



Cirrus bands, transparent, relatively near the horizon—indicates weather fronts are typically 2 to 3 days away.

**Cirrostratus**



Cirrus bands, covering majority of the sky with sun mostly obscured—Typically indicates weather fronts are one day or less away.

**Cirrostratus**



Not increasing, not covering the whole sky—No significant impact on fire weather or behavior.

**Cirrocumulus**



Alone or with some cirrus or cirrostratus—very high instability, usually no impact on surface conditions.

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**Middle Clouds:** Cloud bases typically 6,500 - 23,000 feet. Can be direct and/or indirect indicators of potential fire behavior.

Clouds in red may be of particular concern.

| **Altostratus Nimbostratus** | **Altocumulus** | **Wave Clouds** | **Altocumulus** | **Altocumulus** | **Altocumulus** |
|---|---|---|---|---|---|
| Semi-transparent, sun or moon may be dimly visible—No fire weather impacts, expect reduced activity from added shading. | Semi-transparent, one-level—Indicates weak mid-level instability and increasing moisture. Possible monsoon thunderstorm development within 24 hours. | Lens shaped or continually changing shape and size— Results from strong mid-level winds that may surface and result in running fire. | One or more bands of layers expanding, thickening— Indicates instability present, monitor for additional development. | From the spreading of cumulus or cumulonimbus— Could indicate presence nearby of a thunderstorm. Caution for gusty winds from the direction of clouds. | Generally opaque layers, possibly containing virga— Weak instability, virga may result in gusty winds, cloud density usually inhibits further convection. |

**Altocumulus Flocus (shown)**
**Altocumulus CAstellanus**

Cumulus-like tufts or flat bases with turrets—When observed in morning hours, often indicates afternoon or evening thunderstorms.

**Altocumulus**

Chaotic sky, cloud bases at several levels— Lower cloud base may block view of higher based storms. Hides potential for lightning and gusty winds.

**Weather and Fire Behavior Impacts from Clouds (Mid Level Clouds)**

**Fire Weather and Fire Behavior Impacts from Clouds (Low level)**



**Fair Weather Cumulus**

Flattened appearance—Weak instability present but rarely results in further development. Active fire still possible under low humidity.

**Low Clouds:** Cloud bases up to 6500 feet. Usually have direct impacts on potential fire weather and fire behavior.
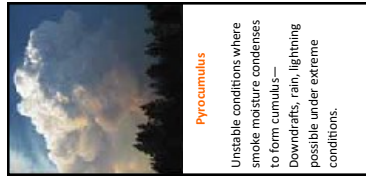
Clouds in red may be of particular concern.
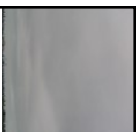


**Cumulus**

Moderate to strong vertical development ment or towering cumulus—Atmosphere is unstable. Monitor for further development and increased fire activity.



**Cumulonimbus (Cb)**

Tops not fibrous, no anvil—Significant vertical motion present, gusty downdrafts likely, thunderstorms possible with erratic fire activity.



**Stratocumulus**

Moderate instability—Showers and downdrafts likely, Thunderstorms possibly hidden, and variable fire behavior.
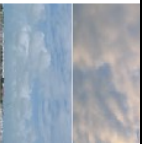


**Stratus**

Smooth appearance, continuous low layer—Often inhibits aircraft use, and minimal fire activity.



**Stratus Fractus/ Cumulus Fractus**

Occurs with rain or snow—Usually associated with cold fronts, and winds may push fire.



**Stratocumulus & Cumulus**

Usually associated with cool weather—Fire activity may increase with afternoon heating and instability.



**Mature Thunderstorm**

Strong Downdraft winds, lightning, heavy rain and hail possible underneath—Distant terrain channeled winds and lightning possible away from cell.

| Pyrocumulus | Tornado | Wall Cloud | Shelf Cloud | Virga |
|---|---|---|---|---|
|  |  |  |  |  |
| Unstable conditions where smoke moisture condenses to form cumulus— Downdrafts, rain, lightning possible under extreme conditions. | Rapidly rotating column under a cumulonimbus cloud that touches the ground. | Lowering of the rain free base of a thunderstorm, often prior to tornado formation. | Represents the leading edge of strong winds in advance e of a thunderstorm. | Rain or snow that evaporates before reaching the ground— gusty outflow winds may dramatically increase fire behavior. |
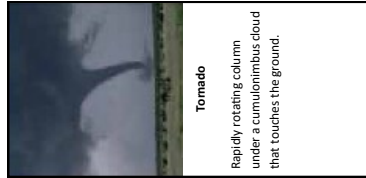
**Special Cases:** These phenomena occur under unstable conditions—use extreme caution when observed, particularly if observed between you and the fire.

Clouds in red may be of particular concern.
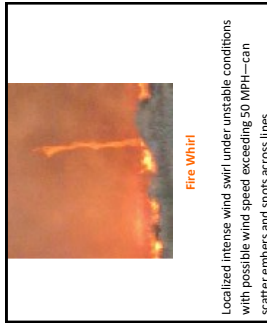


**Fire Whirl**

Localized intense wind swirl under unstable conditions with possible wind speed exceeding 50 MPH—can scatter embers and spots across lines.

**Weather and Fire Behavior Impacts from Clouds**

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**Beaverhead-Deerlodge NF Pocket Cards**



**FIRE DANGER -- B-D NF**
Maximum, Average, and 90th Percentile, based on 12 years data

**Years to Remember: 2021 2017**

Alder Creek

Bear Lake

Sourdough

Fuel Model: Y – Timber (2016)
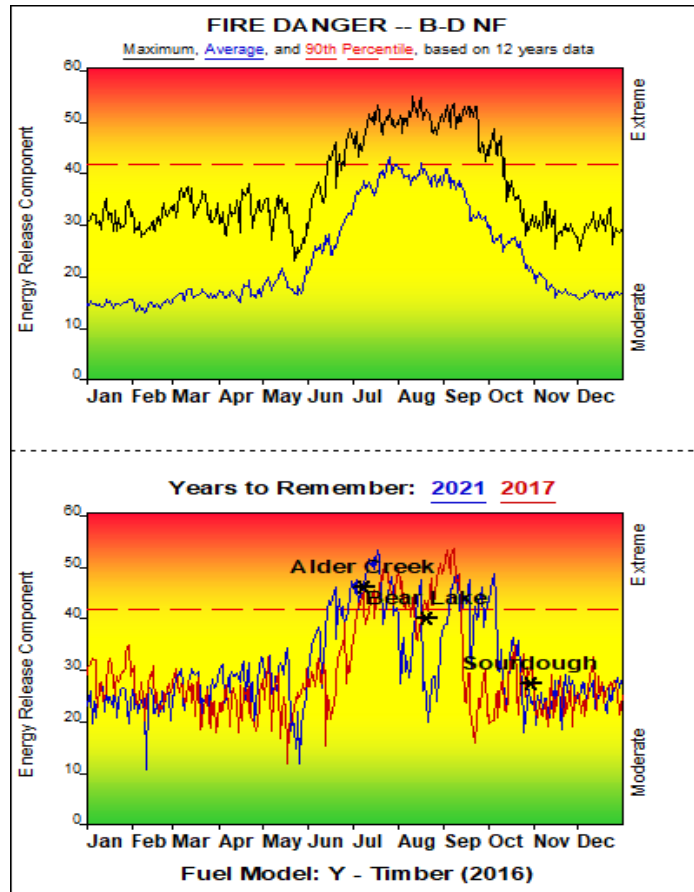
**Beaverhead-Deerlodge NF Pocket Cards cont.**

## Fire Danger Area:
- ◆ B-D NF
- ◆ FWZ 110 & 111
- ◆ (Weather Station)
  - * Meets NWCG Wx Station Standards

## Fire Danger Interpretation:
EXTREME -- Use extreme caution

High -- Watch for change

Moderate -- Lower Potential, but always be aware

Maximum -- Highest Energy Release Component by day
for 2010 - 2021
Average -- shows peak fire season over 12 years (4379 observations)
90th Percentile -- 10% of the 4379 days from 2010 - 2021
had an Energy Release Component above 42

## Local Thresholds - Watch out: Combinations
of any of these factors can greatly increase fire behavior:
**20' Wind Speed** over 30 mph, **RH** less than 20%,
**Temperature** over 85, **Energy Release Component** over 39

## Remember what Fire Danger tells you:
✓ Energy Release Component gives seasonal trends
  calculated from temperature, humidity,
  daily temperature & rh ranges, and precip duration.
✓ Wind is NOT part of ERC calculation.
✓ Watch local conditions and variations across
  the landscape -- Fuel, Weather, Topography.
✓ Listen to weather forecasts -- especially WIND.

## Past Experience:
During March-May when forcasted wind gusts exceed 40 mph and BI is at or near the 90th percentile, fire behavior is active and fire starts are likely due to downed powerlines.

Otherwise, fire starts are most likely when ERCs approach the 70th percentile, while large fire growth is most likely as ERCs approach the 90th percentile. Pay particular attention on days where ERCs approach maximums, a Haines Index of 5 or 6, and unique winds (such as frontal passages) are forcasted.

Responsible Agency: USFS
FF+5.0 build 20210317 03/09/2022-08:21 (C:\Users\beanderson\...\2022 SWMT NFDRS v4)

Design by NWCG Fire Danger Working Team

# Fire Behavior Terminology

**Smoldering** – no flame, barely spreading

**Creeping** – low flame, slow spread

**Running** – definite flames, rapid spread in surface fuels with well-defined head

**Torching** – fire runs up ladder fuels into crowns of individual trees with no crown to crown spread

**Crowning** – fire spreading from crown to crown, either dependent or independent of surface fire

**Flame length** – length from base to tip, not vertically

**Rate of spread** – chains per hour = feet per minute

**Ground fire** – fire burning in organic material below surface litter

**Surface fire** – fire that burns surface litter, other loose debris of the forest floor and small vegetation

**Backing** – fire spreading against the wind, or spreading on level or downward-sloping ground with no wind

**Flanking** – fire spreading perpendicular to the wind

**Backfire** – fire used as an indirect attack method to stop, slow or turn a wildfire

**Burnout** – fire set to fuels inside the control line, to strengthen line, as a part of line construction

**Flare-up** – any sudden acceleration of fire spread or intensification of the fire. A flare-up is of relatively short-duration and doesn't radically change existing control plans.

**Spot Fire** – fire outside the perimeter of the main fire started by flying, or rolling sparks or embers

| Stage of Vegetative Development | Moisture content |
|---|---|
| Fresh foliage, annuals developing, early in growing cycle | 300% |
| Maturing foliage, still developing with full turgor | 200% |
| Mature foliage, new growth complete and comparable to older perennial foliage | 100% |
| Entering dormancy, coloration starting, some leaves may have dropped from stem | 50% |
| Completely cured | Less than 30%, treat as a dead fuel |

# Fuel Models and Fire Behavior

**Grass Group** - Primary carrier of the fire is GRASS.

**Fuel Model 1 -** Grass is fine structured, generally below knee level, essentially continuous, and primarily cured. Rate of Spread (ROS) is moderate; flame length low. Fast moving, and mainly wind or terrain driven fires. Tactics usually include burning out or direct attack with water or swatters. Grass-lands, savanna, grass tundra
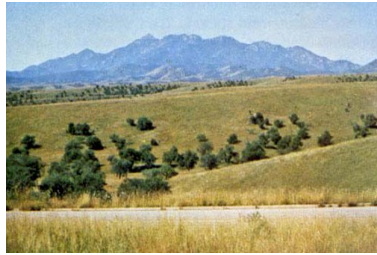


**Fuel Model 2 -** Grass under an open timber or brush overstory. Litter is involved, but grass carries the fire. ROS is < FM1 and intensity is < FM3. Spread rate moderate; flame length moderate. Spotting does occur and may have high rates of spread. Use caution going direct. Found in most of the western regions. Open shrub land and pine stands, some pinon-juniper



**Fuel Model 3 -** Grass is tall, generally around 3 feet. Very high rates of spread with wind. Most intense fire behavior of the grass group. Very common in Florida, but can be found in various forms across the U.S. Generally equipment and firing is used to contain these fires. Tall-grass prairie, marsh

**Shrub Group** - Primary carrier is BRUSH or BRUSH LITTER.



**FM 4 -** Brush is head height (>6ft.), with heavy loadings of dead woody fuel. Fire may involve foliage, live and dead woody material and canopy. Spread rate very high; flame length very high. High reburn potential if initial fire was a surface fire. Mixed chaparral, southern rough, pine barrens of New Jersey, closed jack pine stands of north central states.



**FM 5 -** Brush is about 2ft. high, with light loading of brush litter underneath. Fire is generally carried in the surface fuels, made up of shrub litter, especially at low wind speeds. Surface fuel loads are generally lighter creating a lower intensity fire. Usually shrubs are short and continuous. Found in old fire scars or with some timber over story. Spread rate low to moderate; flame length low to moderate. Young green stands with little or no deadwood. Laurel, vine maple, alder, Manzanita.



**FM 6 -** FM6- Shrubs are more susceptible to fire and can be a primary carrier of fire. Live fuels are absent or sparse. Brush averages 2 to 4ft. high. Brush requires moderate winds to carry fire. Spread rate high (with wind); flame length high. FM6 may not predict rate of spread accurately in mature PJ or oak brush. Can be found in all regions. Chaparral, chemise, oak brush, Alaskan black spruce, taiga, shrub tundra, PJ at high winds (20mph at 20' level).



**FM 7 -** Stands are general 2-6 feet tall. Fire is carried by the shrub and some surface fuels. High live fuel ratios may still burn actively due to flammability of live fuels. Spread rate high; flame length high. Palmetto-gallberry understory with pine overstory, Alaskan black spruce with shrub.

**Timber Group** - Primary carrier of the fire is LITTER in TIMBER.

**FM 8 -** Slow burning ground fires with low flame lengths in tightly compacted, short needle (2 inches or less) conifer or hardwood litter. Spread rate low; flame length low with occasional jackpots of heavy fuels increasing intensity. Direct attack is common. Lodge pole pine, spruce, true and Douglas firs.



**FM 9 -** Dead foliage litter is loosely compacted long needle pine or hardwoods. Spread rate moderate; flame length moderate. Concentrations of dead-down woody material will contribute to possible torching out of trees, spotting, and crowning. In hardwood stands leaf blowers are commonly used to line the fires. Closed stands of long needle ponderosa and southern pine plantations.



**FM 10 -** Fires burn in surface and ground fuels with great intensity. Some green fuel may be present. Overall depth of the fuel is primarily below knees, but some fuel may be higher. Dead and down fuels have higher loading of 3" or greater limb wood. Crowning, spotting and torching are more frequent. Spread rate moderate to high; flame length high. Any forest type can fall into this model if heavy down material is present. Insect or disease ridden stands, or aged partial-cut slash.

**Logging Slash Group** - Primary carrier of the fire is SLASH

**FM 11 -** Needle litter or small amounts of grass or shrubs may be present to carry the fire, but primary carrier is slash. Live fuels are absent or do not play a significant role in fire behavior. Spread rate lowest of slash models; flame length moderate. Commonly seen in cut and leave thinning units. Control may be difficult due to intensity and lower production rates due to fuel loading.

**FM 12 -** Slash covers the ground. Average slash depth is about 2 feet, and slash is not excessively compacted. Approximately ½ of the needles may still be on the branches but are not red. Live fuels are absent, or are not expected to affect fire behavior. Spread rate low; flame length moderate to high. Heavily thinned conifer stands, clear cuts and medium to heavy partial cuts. Larger fuel breaks may be needed due to spotting potential and fire intensity.

**FM 13 -** Fire is carried by a continuous layer of slash. Slash is not coact with an average depth of three feet. Red needles and large quantity of 100 and 1000 hour fuels will be present. High intensity and long sustained fire can be expected due to the higher loading of heavier fuels. Expect control problems.

**Area in Acres**

| Perimeter in Chains | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1 | .01 | .01 | .01 | .01 | .01 | .01 |
| 2 | .03 | .02 | .02 | .02 | .01 | .01 |
| 3 | .06 | .05 | .04 | .04 | .03 | .02 |
| 4 | .11 | .10 | .08 | .06 | .05 | .03 |
| 5 | .17 | .15 | .12 | .10 | .07 | .05 |
| 6 | .25 | .22 | .18 | .14 | .11 | .07 |
| 7 | .34 | .29 | .24 | .20 | .15 | .10 |
| 8 | .45 | .38 | .32 | .26 | .19 | .13 |
| 9 | .57 | .49 | .40 | .32 | .24 | .16 |
| 10 | .7 | .6 | .5 | .4 | .3 | .2 |
| 12 | 1.0 | .8 | .7 | .6 | .4 | .3 |
| 14 | 1.4 | 1.2 | 1.0 | .8 | .6 | .4 |
| 16 | 1.8 | 1.5 | 1.3 | 1.0 | .8 | .5 |
| 18 | 2.3 | 1.9 | 1.6 | 1.3 | 1.0 | .6 |
| 20 | 2.8 | 2.4 | 2.0 | 1.6 | 1.2 | .8 |
| 22 | 3.4 | 2.9 | 2.4 | 1.9 | 1.4 | 1.0 |
| 24 | 4.0 | 3.5 | 2.9 | 2.3 | 1.7 | 1.2 |
| 26 | 4.7 | 4.1 | 3.4 | 2.7 | 2.0 | 1.3 |
| 28 | 5.5 | 4.7 | 3.9 | 3.1 | 2.3 | 1.6 |
| 30 | 6.3 | 5.4 | 4.5 | 3.6 | 2.7 | 1.8 |
| 32 | 7.2 | 6.1 | 5.1 | 4.1 | 3.1 | 2.1 |
| 34 | 8.1 | 6.9 | 5.8 | 4.6 | 3.5 | 2.3 |
| 36 | 9.1 | 7.8 | 6.5 | 5.2 | 3.9 | 2.6 |
| 38 | 10.1 | 8.7 | 7.2 | 5.8 | 4.3 | 2.9 |
| 40 | 11.2 | 9.6 | 8.0 | 6.4 | 4.8 | 3.2 |
| 42 | 12. | 11. | 9. | 7. | 5. | 3.5 |
| 44 | 14. | 12. | 10. | 8. | 6. | 4. |
| 46 | 15. | 13. | 11. | 8.5 | 6. | 4. |
| 48 | 16. | 14. | 11.5 | 9. | 7. | 4.5 |
| 50 | 17. | 15. | 12. | 10. | 7. | 5. |
| 60 | 25. | 21. | 18. | 14. | 11. | 7. |
| 70 | 34. | 30. | 25. | 20. | 15. | 10. |
| 80 | 45. | 38. | 32. | 26. | 19. | 13. |
| 90 | 57. | 49. | 40. | 32. | 24. | 26. |
| 100 | 70. | 60. | 50. | 40. | 30. | 20. |

## Time and Attendance

- On the second shift of a fire you automatically go to a "1st 8's" schedule.

- To code holiday worked use TC 66 for your 8 hrs of holiday and TC 31 only for your base hours worked.

- You are entitled to night differential for any base hours between 1800 and 0600.

- Mandatory R&R days on regularly scheduled work days are coded as 01 and charged to the incident B-code.

- All base time will be charged to WFSE97/0197, or to a "B" code with 0197 override if on an incident or severity.

- All premium time (OT, H-pay, Holiday worked) will be charged to the "P" code or the salary code (ie WFSE97/0197). Override for P-code will be for your location (ie. 0102 if on B-D).

| TIME CODES | |
|---|---|
| Base Pay: | 01 |
| Overtime: | 21 |
| Hazard Pay: | 14 |
| Sunday Differential: | 04 |
| Night Differential: | 11 |
| Holiday Pay: | 66 |
| Credit Hours Earned: | 29 |
| Credit Hours Used: | 50 |
| COMP Time Earned: | 32 |
| COMP Time Used: | 64 |
| Annual Leave Used: | 61 |
| Sick Leave Used: | 62 |
| LWOP: | 71 |
| AWOL: | 72 |
| Holiday Worked | 31 |

Forest Base Code:

  0197 WFSE97XX

ABC Misc p-code:

  0102 P1EKS3XX

Fire Support p-code:

  0102 P1EK3VXX

XX— 2 Digit fiscal year

# PAY PERIOD CALENDAR 2023

| Month | Pay Period | S | M | T | W | T | F | S | Month | Pay Period | S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JAN | 01 | 1 | **2** | 3 | 4 | 5 | 6 | 7 | JUL | 13 | | | | | | | 1 |
| | | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | 14 | 2 | 3 | **4** | 5 | 6 | 7 | 8 |
| | 02 | 15 | **16** | 17 | 18 | 19 | 20 | 21 | | | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| | | 22 | 23 | 24 | 25 | 26 | 27 | 28 | | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| | | 29 | 30 | 31 | | | | | | | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| FEB | 03 | | | | 1 | 2 | 3 | 4 | AUG | 16 | 30 | 31 | | | | | |
| | | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | | | 1 | 2 | 3 | 4 | 5 |  |
| | 04 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | | | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | | 19 | **20** | 21 | 22 | 23 | 24 | 25 | | 17 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| | | 26 | 27 | 28 | | | | | | | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| MAR | 05 | | | | 1 | 2 | 3 | 4 | SEP | 18 | 27 | 28 | 29 | 30 | 31 | | |
| | | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | | | | | | | 1 | 2 |
| | 06 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | | | 3 | **4** | 5 | 6 | 7 | 8 | 9 |
| | | 19 | 20 | 21 | 22 | 23 | 24 | 25 | | 19 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | | 26 | 27 | 28 | 29 | 30 | 31 | | | | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| APR | 07 | | | | | | | 1 | OCT | 20 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | 08 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | | 21 | 8 | **9** | 10 | 11 | 12 | 13 | 14 |
| | | 16 | 17 | 18 | 19 | 20 | 21 | 22 | | | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| | 09 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | | 22 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| | | 30 | | | | | | | | | 29 | 30 | 31 | | | | |
| MAY | 10 | | 1 | 2 | 3 | 4 | 5 | 6 | NOV | 23 | | | | 1 | 2 | 3 | 4 |
| | | 7 | 8 | 9 | 10 | 11 | 12 | 13 | | | 5 | 6 | 7 | 8 | 9 | **10** | 11 |
| | | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| | 11 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | | 24 | 19 | 20 | 21 | 22 | **23** | 24 | 25 |
| | | 28 | **29** | 30 | 31 | | | | | | 26 | 27 | 28 | 29 | 30 | | |
| JUN | 12 | | | | | 1 | 2 | 3 | DEC | 25 | | | | | | 1 | 2 |
| | | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | | 11 | 12 | 13 | 14 | 15 | 16 | 17 | | | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | 13 | 18 | **19** | 20 | 21 | 22 | 23 | 24 | | 26 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| | | 25 | 26 | 27 | 28 | 29 | 30 | | | | 24 | **25** | 26 | 27 | 28 | 29 | 30 |
| | | | | | | | | | | 27 | 31 | | | | | | |

## Butte Ranger District Office Security

### Employee Entrance

- Enter your 4 Digit Code: ____ ____ ____ ____

- Push #

- Do not attempt to open door until the "SCHLAGE" flashes green.

### Deactivate Alarm

- Enter your 5 Digit Code: ____ ____ ____ ____ ____

- Press CMD. Select DISARM. Select ALL—YES. The keypad light will turn green.

- If alarm is already sounding, Press CMD, select DISARM. Select ALL—Yes. Enter 5 Digit Code.

### Activate Alarm

- Check to ensure the building is empty.

- Press CMD. Enter your 5 Digit Code. Select ARM. Select ALL—YES.

- You will have 60 seconds to exit.

The gate needs to be closed and the alarm set when leaving on weekends or after 1630 on weekdays.

When entering the compound after hours, always check the alarm status. **There is no audible alarm outside**.
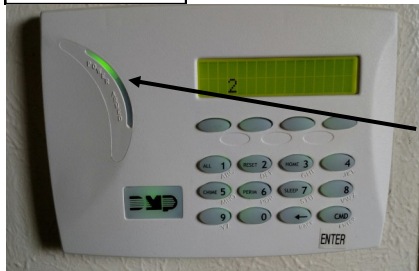
### Alarm System

- The alarm system will beep if active when you enter the building and light will be red

- After 60 seconds the alarm will sound.

- If the light is green, alarm is not activated.

**Butte Ranger District Office Security**

**Bullpen Gates**

### Deactivate Alarm

- Enter the 5 Digit Code
  ___ ___ ___ ___ ___
  Than # to enter.

**This is the Alarm Keypad**

- The RED alarm light will turn off when the code is entered correctly.

**This only disables the Bullpen Alarm.** When entering the building, you will need to find an alarm keypad and disable the alarm.

If this light is RED the alarm is active



To open the gate, enter your 4 Digit Door Code here:

When you press #, the gates should open.

### Exiting the Bullpen

- Approach the Gate in your vehicle, the gate should open automatically.
- If the gate fails to open, you will need to open it manually. Pull the manual release lever towards you. Than the gate can be manually opened. After exiting, move the lever to it's original position. Pull on the gate to ensure it is engaged, than enter the code into the keypad to close the gate.
- The alarm keypad at the gate will only engage the bullpen alarm. You will need to activate the building alarm from inside.

**INCIDENT PROCESSING OF INJURIES OR ILLNESSES FOR US FOREST SERVICE**
**(USFS) EMPLOYEES ONLY**

**1. Provide Medical Treatment**
1.1. First priority is to get emergency medical care, if necessary. Emergency rooms are the best choice as they are required to provide treatment even without advance guarantee of payment.
1.2. Complete appropriate paperwork immediately following emergency care.
1.3. If the injury requires continuing medical care and the injured employee is unable to work, return the injured employee to their home unit as soon as possible. Do not keep them in camp

**2. Form CA-16 Authorization for Examination and/or Treatment Process**
2.1. Only Albuquerque Service Center – Human Resources Management (ASC-HRM)
Workers' Compensation (WC) personnel, Compensation Claims Unit Leader (COMP), Compensation for Injury Specialist (INJR), or Finance Section Chief (FSC) assigned to the incident are authorized to issue Form CA-16 for FS regular and AD employees.
2.2. A supervisor and/or personnel representing the agency may provide verbal authorization for examination and/or treatment in the absence of the above referenced incident personnel if outside ASC-HRM regular business hours. Contact ASC-HRM WC within 48 hours after medical treatment or on the next business day for issuance of the CA-16 by ASC-HRM WC.
2.3. The Department of Labor (DOL) does not allow the issuance of a CA-16 if more than 7 calendar days have passed since the date of injury.
2.4. If an employee is filing a Workers' Compensation claim and requires a prescription but cannot pay for it while on the incident, it can be purchased with a purchase card and a commissary deduction will be made on the OF-288, Fire Time Report. The employee uses the receipt from the purchaser to claim reimbursement from the DOL. This should only be used if there are no pharmacies that accept the DOL fee schedule.
2.5. Personnel on an incident without a COMP, INJR or FSC assigned must contact ASC-HRM WC for medical treatment authorization.

  ⬚ Call the ASC-HRM Contact Center @ 877-372-7248, select option [2] for HRM, then follow the prompts for Forest Service employees, during regular business hours Monday – Friday 0700-1700 Mountain Time (MT), or the next business day following a weekend, or holiday.
  ⬚ State you have an injured worker and are requesting authorization for medical treatment.

**5. Form CA-1 Federal Employee's Notice of Traumatic Injury and Claim for Continuation of Pay/ Compensation**
5.1. The CA-1 will be completed in eSafety by the injured employee, or someone acting on the employee's behalf if the employee is not able to do so. The CA-1 will be generated by entering all required fields in eSafety. Page 1 of the CA-1 is to be filled out completely by the injured employee including signature in block 15. If the injured employee is unable to sign, the supervisor or someone acting on their behalf may complete and sign for the injured employee.
5.2. If the CA-1 cannot be completed in eSafety at the incident, a hard-copy will be prepared at the incident and faxed to the home unit, but it is mandatory that all CA-1 forms be generated from eSafety and are processed by ASC-HRM WC. The completed eSafety generated CA-1 (along with the CA-16, if issued) must be printed, signed and faxed to ASC-HRM WC at 866-339-8583 within 48 hours of the date the employee reported the injury. The original CA-1 is to be retained by the employee.

5.3. Blocks 1-8 will reflect the injured employee's personal information. The following information is in reference to a completed CA-1 in eSafety. The CA-1 will be generated by entering all required information in eSafety.

> Block #7 shall be the employee's home mailing address; use a local address such as your district office. Forms need to be returned promptly

5.4. Claims submitted for FS AD Casual Hires must be complete in eSafety and shall include all requested information prior to faxing to ASC-HRM WC:

> ▢ AD's complete Social Security Number (SSN).
> ▢ OF-288, Fire Time Report, and one of the following documents Single Resource Casual Hire Form, Resource Order or crew Manifest (if on a crew).
> ▢ Hiring unit supervisor, full legal name and phone number.

5.5. Supervisor completes page 2 of the CA-1 blocks 17 – 39. Note: The supervisor should indicate a phone number where they can be reached immediately in the event more information is needed.

5.6. Block #17 shall reflect the ASC-HRM WC address:

> USDA Forest Service, ASC-HRM
> Workers' Compensation (MS 326)
> 4000 Masthead St., NE
> Albuquerque, NM 87109

5.7. Block #18 is the injured employee's duty station physical address.

5.8. Fax the completed CA-1 (along with the CA-16, if available) to ASC-HRM WC within 48 hours of the employee reporting the injury. The employee should retain the original for their records.
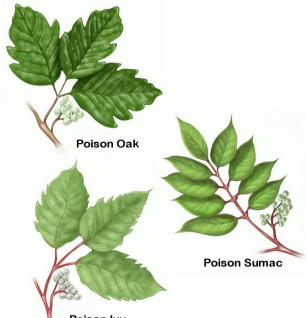
5.9. Include the employee's name and SSN on the upper right hand corner of the second page and all supporting documentation in case the pages are separated.

5.10. The original CA-1 and page 4 of the CA-1, Receipt of Notice of Traumatic Injury is given to the injured employee.

**6. Process Checklist**

- Supervisor/safety manager are notified, and an advocate assigned.
- Supervisor/IMT contacted ASC for a CA-16 and follows up with facility/physician to ensure it was received. When on an incident, use your home supervisor for paperwork.
- Physician was contacted to ensure the CA-16 was completed and returned. MD or DO signature is required on all paperwork.
- Medical documentation contains a diagnosis, clearly links the injury/illness to work, and states start and end dates for any required Restricted Duty or Days Away.
- Local address used when entering into e-Safety.
- CA-1 or CA-2 printed from e-Safety, signed, and faxed to ASC, or emailed to your ASC case manager. Ensure that wildland firefighters and EMT's are identified as emergency workers in e-Safety.
- CRM number and case manager name received from ASC.
- All injury/illness related paperwork is kept by the employee; employment related paperwork is kept my the supervisor.
- You should receive a 9 digit claim number from OWCP. Give this number to all your providers. **Do not pay bills our of your own pocket.**

## Poison Oak/Ivy Exposure

Identification:

Typically a shrub with three leaflets.

Poison oak will sometimes grow in vine form.

Poison oak leaves tend to scalloped, toothed, or lobed and somewhat resembling a true oak leaf.

Poison oak and ivy leaves grow alternately on the stem and never have thorns.

The two side leaflets tend to have short stalks.

The oil (Urushiol) is in every part of the plant.



Poison Oak

Poison Sumac

Poison Ivy

Treatment:

If exposure was with-in 15 minutes wash skin vigorously with soap and water. After 15 minutes the oil becomes a resin-like substance that binds with your skin.

If over 15 minutes use Technu to clean skin.

Always use cold water. Warm water will open you pores and allow the oil to spread.

Shirt and pants cuffs, gloves, and watch bands tend to get saturated with the oils. Watch bands should be wiped down with Technu. Gloves and cuffs should be soaked in Technu than rinsed.

The oil spreads easily to other surfaces. So, all hard surfaces, such as tools, boots, and vehicle interiors, should be completely wiped down with isopropyl alcohol or some type of solvent.

All washable items, such as clothes and packs, should be washed in hot water with a laundry degreaser (Simple Green).

Relief:

Calamine lotion or Calagel can be used to ease itching.

If the rash has spread to the face , privates, or a significant portion of your body, seek further medical attention. If at an ongoing incident, the medical unit may be able to provide some help.

# Burn Injury Information

**Burn Injury Criteria:**

- Partial thickness burns (second degree) involving greater than 5% Total Body Surface Area (TBSA).
- Burns involving the face, hands, feet, genitals, or major joints.
- Third-degree burns of any size are present.
- Chemical burns or electrical burns, including lightning injury are present.
- Inhalation injury is suspected.
- Burns are accompanied by traumatic injury (such as fractures).
- Individuals are unable to immediately return to full duty.

It is imperative that action is expeditious, as burn injuries are often difficult to evaluate and may take 72 hours to manifest themselves.  If there is any doubt as to the severity of the injury, immediately refer and transport the employee to a regional burn center.

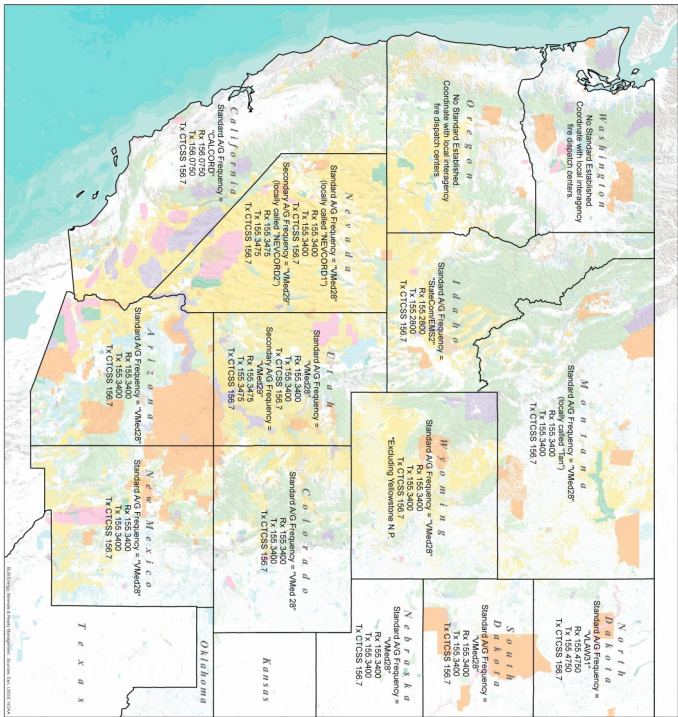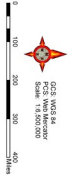| Regional Burn Centers | | |
|---|---|---|
| AK | **Fairbanks Memorial Hospital** 1650 Cowles Street, Fairbanks, AK 99701 | Tel: (907) 452-8181 Fax: (907) 451-7716 |
| AZ | **Arizona Burn Center at Maricopa Medical Center** 2601 E. Roosevelt Street Phoenix, AZ 85008 | Tel: (602) 344-5637 Fax: (602) 344-5705 |
| CA North | **UC Davis Regional Burn Center** 2315 Stockton Blvd., Sacramento, CA 95817 | Tel (916) 734-3636 Fax: (916) 734-5375 |
| CA South | **The Grossman Burn Center - Sherman Oaks** 4929 Van Nuys Blvd. Sherman Oaks, CA 91403 | Tel: (818) 907-4580 Fax: (818) 907-2817 |
| NV | **Lion's Burn Center University Medical Center** 1800 W. Charleston, Las Vegas, NV 89102 | Tel: (702) 383-2268 |
| NM | **New Mexico Regional Burn Center** 2211 Lomas NE, Albuquerque, NM 87131 | Tel: (888) 866-7257 Fax: (505) 272-1188 |
| OR | **Oregon Burn Center** 3001 N. Gantenbein Ave., Portland, OR 97227 | Tel: (503) 413-4232 Fax: (503) 413-4592 |
| UT | **University of Utah Hospital Burn Center** 50 North Medical Drive, Salt Lake City, UT 84132 | Tel: (801) 581-2700 Fax: (801) 585-2103 |
| WA West | **University of Washington Burn Center Harborview** Box 359796, 325 Ninth Ave. Seattle, WA 98104 | Tel: (206) 731-3140 Fax: (206) 744-2896 |
| WA East | **Sacred Heart Medical Center Burn Program -** W. 101 8th Ave., Spokane, WA 99204 | Tel: (509) 474-4684 Fax: (509) 474-4457 |

# Western U.S.
## Standard Air to Ground Frequencies for
## Air Ambulance/Air MedEvac
## on Wildland Fire Incidents

**Map Symbols Legend**

- Bureau of Land Management
- Bureau of Reclamation
- Department of Defense
- National Park Service
- US Fish & Wildlife Service
- US Forest Service
- Other Federal Agencies
- Indian Reservation Tribal Lands
- State Lands
- Local Government Lands
- Private Lands
- State Borders

For Official Use Only:
FOIA Release Exempt. Data to be protected as
Sensitive But Unclassified (SBU)

**DISCLAIMER:**
The designation of these standard frequencies does not
prevent alternate or contingent frequencies from being
established. Please coordinate with local interagency fire
dispatch centers.

No warranty is made by the Bureau of Land Management
for use of this data for purposes not intended by BLM

GCS WGS 84
PCS Web Mercator
Scale 1:6,500,000

Date: 5/12/2020, BTF

0  100  200  300  400 Miles

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**Washington**
No Standard Established.
Coordinate with local interagency
fire dispatch centers.

**Oregon**
No Standard Established.
Coordinate with local interagency
fire dispatch centers.

**California**
Standard A/G Frequency =
"CALCORD"
Rx 156.0750
Tx 156.0750
Tx CTCSS 156.7

**Nevada**
Standard A/G Frequency = "VMed28"
(locally called "NEVCORD1")
Rx 155.3400
Tx 155.3400
Tx CTCSS 156.7
Secondary A/G Frequency = "VMed22"
(locally called "NEVCORD2")
Rx 155.3475
Tx 155.3475
Tx CTCSS 156.7

**Idaho**
Standard A/G Frequency =
"StandComEMS22"
Rx 155.2800
Tx 155.2800
Tx CTCSS 156.7

**Montana**
Standard A/G Frequency = "VMed28"
Rx 155.3400
Tx 155.3400
Tx CTCSS 156.7

**Utah**
Standard A/G Frequency =
"VMed28"
Rx 155.3400
Tx 155.3400
Tx CTCSS 156.7
Secondary A/G Frequency =
"VMed22"
Rx 155.3475
Tx 155.3475
Tx CTCSS 156.7

**Arizona**
Standard A/G Frequency = "VMed28"
Rx 155.3400
Tx 155.3400
Tx CTCSS 156.7

**Wyoming**
Standard A/G Frequency = "VMed28"
Rx 155.3400
Tx 155.3400
Tx CTCSS 156.7
"Excluding Yellowstone N.P.

**Colorado**
Standard A/G Frequency = "VMed28"
Rx 155.3400
Tx 155.3400
Tx CTCSS 156.7

**New Mexico**
Standard A/G Frequency = "VMed 28"
Rx 155.3400
Tx 155.3400
Tx CTCSS 156.7

**North Dakota**
Standard A/G Frequency =
"VLAW31"
Rx 155.4750
Tx 155.4750
Tx CTCSS 156.7

**South Dakota**
Standard A/G Frequency =
"VMed28"
Rx 155.3400
Tx 155.3400
Tx CTCSS 156.7

**Nebraska**
Standard A/G Frequency =
"VMed28"
Rx 155.3400
Tx 155.3400
Tx CTCSS 156.7

*Texas*

*Oklahoma*

*Kansas*

88

# NOTES

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# Beaverhead-Deerlodge N.F. Incident Organizer

## Initial Attack Fire Size-Up Report

| Incident Action # | SO Fire #: | Initial Action Date/Time: |
|---|---|---|

| Fire Name: | | Est Size: |
|---|---|---|

| IC: | Trainee: |
|---|---|

| Map Datum: WGS84 | Latitude: | Longitude: | Ownership: |
|---|---|---|---|

| Legal | T: | R: | Sec: | 1/4 / 1/4 / |
|---|---|---|---|---|

| Radio Frequency: |
|---|

| Control Problems: | (1) Yes | (2) No | Specify: |
|---|---|---|---|
| Life & Property Threatened?: | (1) Yes | (2) No | Specify: |

| Access: |
|---|

| Character of Fire: | (1) Smoldering (3) Running (5) Torching (7) Erratic<br>(2) Creeping (4) Spotting (6) Crowning |
|---|---|
| Flame Length: | (1) Under 2' (2) 2-4' (3) 4-8' (4) 8-11' (5) 11'+ |
| Fuel Type: | (1) Grass (4) Juniper (7) Aspen<br>(2) Grass/Brush (5) Lodgepole Pine (8) Slash<br>(3) Mountain Mahogany (6) Spruce/Fir (9) Other (specify) |
| Position on Slope: | (1) Ridgetop (4) Middle 1/3 (7) Valley Bottom<br>(2) Saddle (5) Lower 1/3 (8) Mesa/Plateau<br>(3) Upper 1/3 (6) Canyon Bottom (9) Flat or Rolling |
| Aspect: | (1) Flat (3) NE (5) SE (7) SW (9)NW<br>(2) North (4) East (6) South (8) West (10) Ridgetop |
| Slope: | (1) 0-25% (2) 26-40% (3) 41-55% (4) 56-75% (5) 76 +% |
| Spread Potential: | (1) Low (2) Moderate (3) High (4) Extreme |
| Weather Conditions: | (1) Clear (4) Thunderstorms (7) Light Rain<br>(2) Scattered Clouds (5) Lightning (8) Heavy Rain<br>(3) Building Cumulus (6) Overcast (9) Snowing |
| Wind Direction: | (1) Flat (3) NE (5) SE (7) SW (9)NW<br>(2) North (4) East (6) South (8) West (10) Variable |
| Wind Speed: | mph Gusts: mph |
| Elevation: | ft. |

| Resources on Scene: | Additional Resources Needed: |
|---|---|

| Fire Investigator Needed: | Human, Unknown or Lightning with High Values at Risk (protect origin)<br><br>(1) Yes | Lightning<br><br>(2) No |
|---|---|---|

| Fire Investigator Name: | |
|---|---|

| Containment Date/Time: | Controlled Date/Time: | Out Date/Time: |
|---|---|---|

2017

# MEDICAL PLAN (ICS 206 WF)

| Medical Incident Report |
|---|

**FOR A NON-EMERGENCY INCIDENT, WORK THROUGH CHAIN OF COMMAND TO REPORT AND TRANSPORT INJURED PERSONNEL AS NECESSARY.**

**FOR A MEDICAL EMERGENCY:  IDENTIFY ON SCENE INCIDENT COMMANDER BY NAME AND POSITION AND ANNOUNCE "MEDICAL EMERGENCY" TO INITIATE RESPONSE FROM IMT COMMUNICATIONS/DISPATCH.**

Use the following items to communicate situation to communications/dispatch.

**1. CONTACT COMMUNICATIONS / DISPATCH** (Verify correct frequency prior to starting report)
  *Ex: "Communications, Div. Alpha. Stand-by for Emergency Traffic."*
**2. INCIDENT STATUS:** *Provide incident summary (including number of patients) and command structure.*
  *Ex: "Communications, I have a Red priority patient, unconscious, struck by a falling tree.  Requesting air ambulance to Forest Road 1 at (Lat./Long.)  This will be the Trout Meadow Medical, IC is TFLD Jones. EMT Smith is providing medical care."*

| Severity of Emergency / Transport Priority | ☐ **RED / PRIORITY 1 Life or limb threatening injury or illness.  Evacuation need is IMMEDIATE** <br> *Ex: Unconscious, difficulty breathing, bleeding severely, 2° – 3° burns more than 4 palm sizes, heat stroke, disoriented.* <br> ☐ **YELLOW / PRIORITY 2 Serious injury or illness.  Evacuation may be DELAYED if necessary.** <br> *Ex: Significant trauma, unable to walk, 2° – 3° burns not more than 1-3 palm sizes.* <br> ☐ **GREEN / PRIORITY 3 Minor injury or illness.  Non-Emergency transport** <br> *Ex: Sprains, strains, minor heat-related illness.* |
|---|---|
| Nature of Injury or Illness <br> & <br> Mechanism of Injury | *Brief Summary of Injury or Illness* <br> *(Ex: Unconscious, Struck by Falling Tree)* |
| Transport Request | *Air Ambulance / Short Haul/Hoist* <br> *Ground Ambulance / Other* |
| Patient Location | *Descriptive Location & Lat. / Long. (WGS84)* |
| Incident Name | *Geographic Name + "Medical"* <br> *(Ex: Trout Meadow Medical)* |
| On-Scene Incident Commander | *Name of on-scene IC of Incident within an Incident (Ex: TFLD Jones)* |
| Patient Care | *Name of Care Provider* <br> *(Ex: EMT Smith)* |

**3. INITIAL PATIENT ASSESSMENT:** *Complete this section for each patient as applicable (start with the most severe patient)*

Patient Assessment: See IRPG page 106

  Treatment:

**4. TRANSPORT PLAN:**
Evacuation Location (*if different*): (*Descriptive Location (drop point, intersection, etc.) or Lat. / Long.*)   Patient's ETA to Evacuation Location:

Helispot / Extraction Site Size and Hazards:

**5. ADDITIONAL RESOURCES / EQUIPMENT NEEDS:**
*Example: Paramedic/EMT, Crews, Immobilization Devices, AED, Oxygen, Trauma Bag, IV/Fluid(s), Splints, Rope rescue, Wheeled litter, HAZMAT, Extrication*

**6. COMMUNICATIONS: Identify State Air/Ground EMS Frequencies and Hospital Contacts as applicable**

| Function | Channel Name/Number | Receive (RX) | Tone/NAC * | Transmit (TX) | Tone/NAC * |
|---|---|---|---|---|---|
| COMMAND | | | | | |
| AIR-TO-GRND | | | | | |
| TACTICAL | | | | | |

**7. CONTINGENCY:** <u>*Considerations:*</u>  *If primary options fail, what actions can be implemented in conjunction with primary evacuation method?  Be thinking ahead.*

**8. ADDITIONAL INFORMATION:** *Updates/Changes, etc.*

<u>**REMEMBER:**</u>  Confirm ETA's of resources ordered.  Act according to your level of training.  Be Alert.  Keep Calm.  Think Clearly.  Act Decisively.

# BUTTE-JEFFERSON

## LINK TREE



https://linktr.ee/buttejefferson